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(NASA-CR-161427) RESULTS OF TWO TESTS IN
THE MSFC 14 BY 14-INCH TRANSONIC WIND TUNNEL,
FA 27 (TWT-655) AND FA 28 (TWT-656) Final
Report (Lockheed Missiles and Space Co.)
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RESULTS OF TWO TESTS IN THE
MSFC 14 x 14-INCH TRISONIC
WIND TUNNEL, FA 27 (TWT-655)
FA 28 (TWT-656)

FINAL REPORT

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Marshall Space Flight Center, Alabama 35812

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FOREWORD

This final report presents the results of an experimental study to: (1) determine the cause and possible aerodynamic alterations required to eliminate the Orbiter rolling moment couple; (2) determine alterations to alleviate the forward Orbiter/ET attach point loads; and (3) provide data to verify previous data taken at AEDC. The study was conducted by personnel of the Lockheed-Huntsville Research & Engineering Center for Marshall Space Flight Center under Contract NAS8-32530. The wind tunnel tests were conducted in the MSFC 14 x 14-Inch Trisonic Wind Tunnel from March to August 1979. The MSFC technical monitor for this study is Mr. Paul Ramsey, ED32.

SUMMARY

Wind tunnel tests were conducted in the MSFC 14-Inch Wind Tunnel with the 0.004-scale model of the Space Shuttle Launch Vehicle. The purposes of the tests were: (1) determine the cause and possible aerodynamic alterations required to eliminate the Orbiter rolling moment couple; (2) determine configuration alterations to alleviate the forward Orbiter/ET attach point loads; and (3) provide data to verify previous data taken at AEDC. The tests were conducted between March and August 1979.

The basic 0.004-scale model (74-OTS) used in previous tests was used in this study. A new External Tank was fabricated with no protuberances. Data were obtained with newly fabricated Orbiter wing and elevons. Data were also obtained with a six-component balance in the Orbiter that was sting supported while the ET and SRBs were attached and the ET/SRB assembly supported by a sting in each SRB.

The results of the test show:

1. ET protuberances induce a positive Orbiter rolling moment under certain conditions.
2. The effect of Orbiter body flap deflections on Launch Vehicle longitudinal coefficients was near zero.

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NOMENCLATURE

<u>Symbol</u>	<u>Description</u>
A_{BF}	Orbiter body flap planform area, in ²
$A_{b_{ORB}}$	Orbiter total base area, in ²
b_w	Orbiter wing span, in.
\bar{C}	Orbiter wing mean aerodynamic chord, in.
C_{AT}	Orbiter total axial force coefficient
C_l	Orbiter rolling moment coefficient
C_{BW}	Orbiter wing root bending moment coefficient
\bar{C}_e	Orbiter elevon mean aerodynamic chord
C_m	Orbiter total pitching moment coefficient referenced to MRP
C_N	Orbiter total normal force coefficient
C_{N_W}	Orbiter wing normal force coefficient
C_{TW}	Orbiter wing torsion moment coefficient
C_Y	Orbiter side force coefficient
C_{Y_N}	Orbiter yawing moment coefficient referenced to MRP
ET	External Tank
i_b	effective Orbiter base cant angle, deg
L_{REF}	reference length, in.
M	Mach number
MRP	moment reference point
P_t	tunnel freestream total pressure, psia
P_∞	tunnel freestream static pressure, psia

<u>Symbol</u>	<u>Description</u>
q	tunnel freestream dynamic pressure, psia
S_e	elevon reference area, in ²
S_{REF}	reference area, in ²
SRB	Solid Rocket Booster
SSLV	Space Shuttle Launch Vehicle
T_t	tunnel freestream total temperature, F
\bar{X}_{BFORB}	X distance from MRP to centroid of body flap, in.
\bar{X}_{bORB}	X distance from MRP to centroid of Orbiter base, in.
X_O, Y_O, Z_O	Orbiter coordinate system, in.
X_T, Y_T, Z_T	ET coordinate system, in.
X_{TO}	X moment transfer from Orbiter balance to MRP, in.
Z_{bORB}	Z distance from MRP to centroid of Orbiter base, in.
Z_{TO}	Z moment transfer from Orbiter balance to MRP, in.
α	model angle of attack, deg
α'	preset model attitude, measured with sector at zero, deg
β	model angle of sideslip, deg
Δ	increment of coefficient
δ_{BF}	Orbiter body flap deflection angle, deg
δ_{EI}	inboard elevon deflection angle, deg
δ_{EO}	outboard elevon deflection angle, deg
ϕ	aerodynamic roll angle (including all offsets and deflections), deg

1. INTRODUCTION

This report presents the analysis of the data obtained in tests of an 0.004-scale model of the Space Shuttle Launch Vehicle in the MSFC 14-Inch Trisonic Wind Tunnel. The tests and analysis had three primary objectives:

1. Determine the cause and possible aerodynamic configuration alterations required to eliminate the Orbiter rolling moment couple.
2. Determine configuration alterations to alleviate the forward Orbiter/ET attach point loads.
3. Provide data to verify previous data taken at AEDC.

1.1 BACKGROUND

Previous tests indicate that there is a continuous Orbiter rolling moment which produces high loads in the Orbiter/ET attach structure. There was a need to reduce these loads. One way would be to use differential elevon control. A more direct approach would be to alter the flow field which causes this rolling moment.

The Space Shuttle Launch Vehicle is basically a symmetrical vehicle. It does, however, have nonsymmetrical protuberances on the External Tank. It was suspected that these protuberances were the cause of the Orbiter rolling moment. If the cause could be identified, an aerodynamic alteration could be developed to reduce the attach structure loads.

Another concern related to the attach structure was the high Orbiter/ET forward attach point loads. The method analyzed here for reducing these loads was the deflection of the Orbiter body flap. It was hoped that a negative Orbiter pitching moment increment could be produced, resulting in lower forward attach point loads.

Previous tests have produced different wing load results. Wing data were obtained in different facilities with two different size models, one model with the left wing instrumented and the other with instrumentation in the right wing. An analysis was needed to see if these differences in wing loads were due to the non-symmetry of the ET protuberances, or to differences in models and test conditions. A metric wing (left and right) with instrumentation on the right side was fabricated for the 0.004-scale Space Shuttle model. It, in conjunction with a six-component Orbiter balance, was used to provide data for verification of previous data taken at AEDC.

1.2 OVERVIEW

The test program developed to meet the three primary objectives was scheduled as a series of three tests. The first test was an Orbiter roll test and was conducted as MSFC TWT-655 (NASA Series No. FA 27). Because of facility schedule slips and resulting reduction in available test time the second test, MSFC TWT-656 (NASA Series No. FA 28) was the last one completed. The third objective, of providing data to verify previous data, was partially reached with data taken during TWT-656.

During the analysis of TWT-655 data, it was concluded that the four-component balance that was used was not adequately accurate in side force to be able to transfer the Orbiter rolling moment with the accuracy desired. These data are not presented, however, the balance problems are discussed in more detail in Section 3.1.

Test TWT-656 was conducted with an SSLV model in the Marshall Space Flight Center's 14 x 14-Inch Trisonic Wind Tunnel. The 0.004-scale model (74-OTS) was instrumented with a six-component balance measuring Orbiter loads, a three-component balance measuring Orbiter wing loads, and gages to measure both inboard and outboard elevon hinge moments. The test (NASA Series No. FA 28), occupied the facility between 10 July and 9 August 1979. The total angle of attack and yaw ranges that were covered were from +8 to -8 deg. All runs were made at either $\alpha = 0$ or $\beta = 0$. The Mach range was

0.60 to 1.25. The roll angles were 0, 90 and -90 deg. Aerodynamics of the following configurations were investigated: (1) Orbiter alone; (2) Orbiter alone without wing gap sealed; (3) SSLV with no ET protuberances; (4) multiple body flap deflections; and (5) transition grit on Orbiter wing.

2. TEST DESCRIPTION

This section describes test TWT-656 that was conducted to obtain the data for this analysis. A more detailed discussion of the test set-up is available in the pretest report (Ref. 1). The data obtained were published in a DATA MAN report (Ref. 2).

2.1 TUNNEL FACILITY

The test was conducted in the MSFC 14 x 14-Inch Transonic Wind Tunnel located at Marshall Space Flight Center, Alabama. A detailed description of this facility is available in the MSFC technical handbook (Ref. 3). The tunnel is a pressure storage blowdown type to atmosphere or vacuum. The test section size is 14 x 14 x 20 in. A transonic test section is provided for a Mach number range of 0.3 to 2.5 and a supersonic test section for Mach numbers from 2.75 to 5.0. The transonic section has a variable pressure differential across the porous walls which allows for wave cancellation in the transonic flow regime. The data are converted to coefficient form and cards are punched at the completion of each run.

2.2 MODEL DESCRIPTION

The existing 0.004-scale model of the Space Shuttle launch configuration was used in this study. A sketch of the model with pertinent dimensions is presented in Fig. 1. A photograph of the model (with non-metric wing) is shown in Fig. 2. A complete description of the model can be found in Ref. 4. The 0.004-scale Orbiter model is slightly more than five inches long.

In preparation for this and other tests, since the original design, several modifications have been made to the model and are listed on page 6.

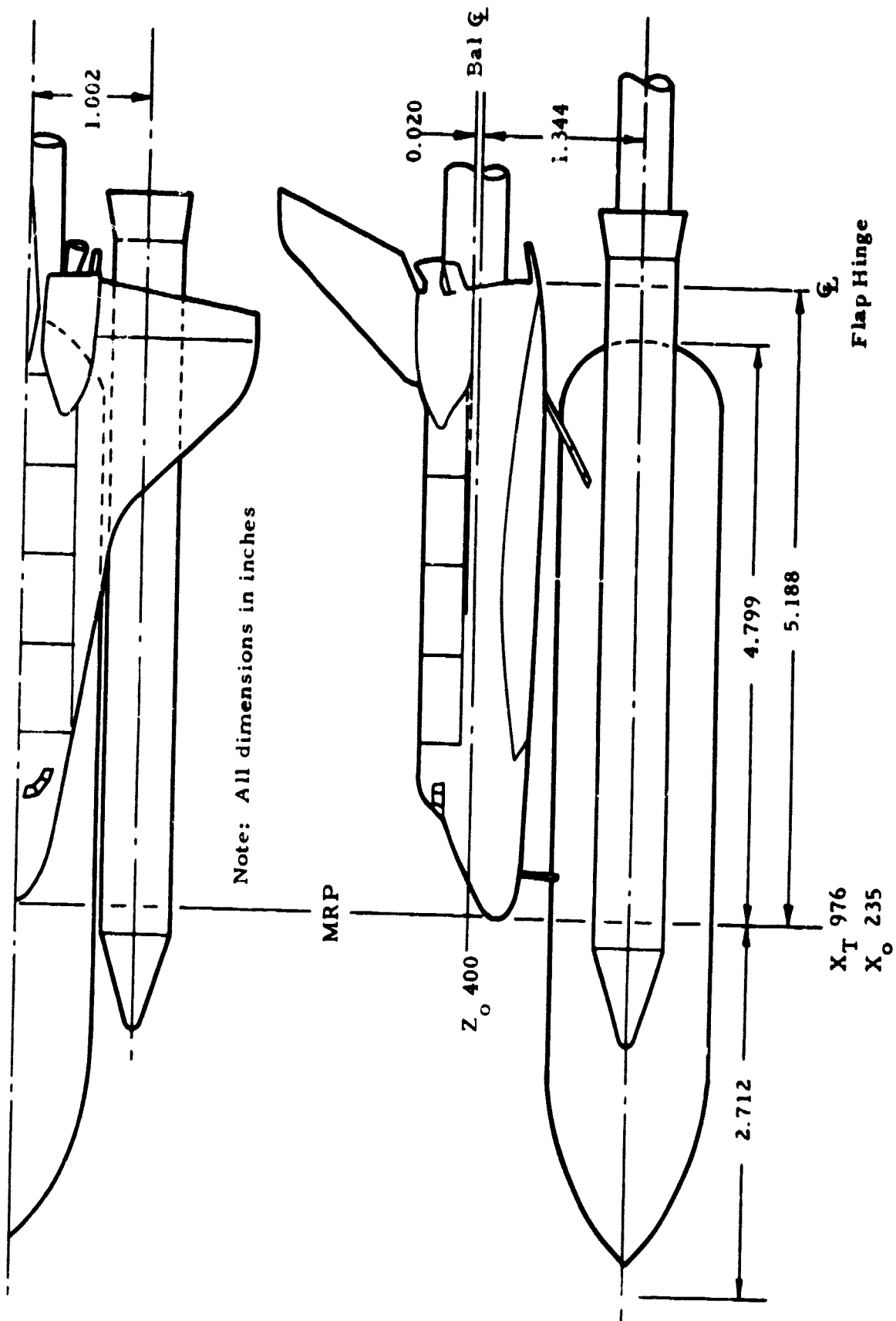


Fig. 1 - General Arrangement of Launch Vehicle Model

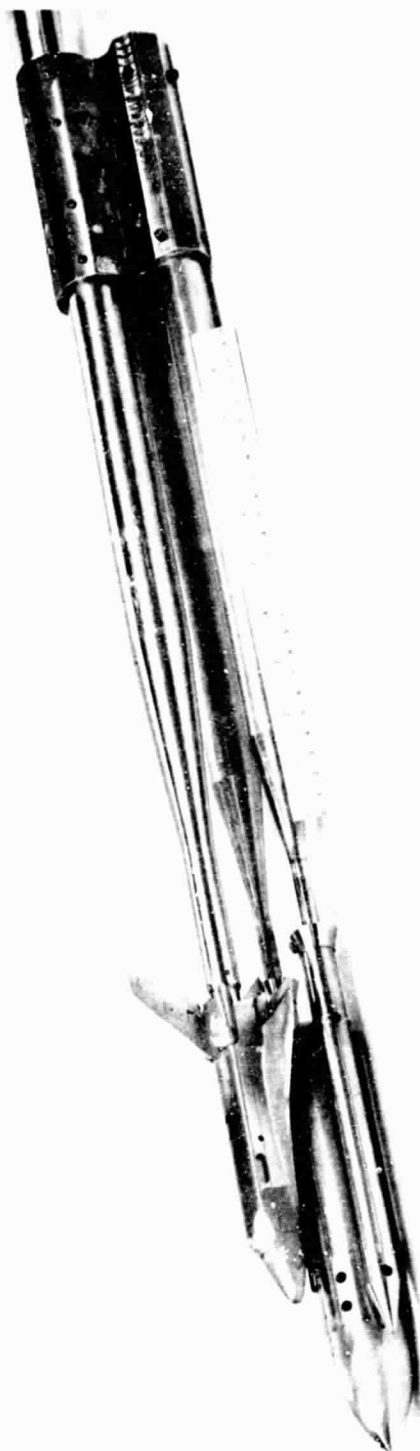


Fig. 2 - Space Shuttle Launch Vehicle 0.004-Scale Model - Three-Sting Setup

- The ET nose was updated with the current ADS configuration.
- The Orbiter/ET attach structure was modeled in more detail.
- The SRB aft attach rings were modified to resemble the most recent configuration and was shifted aft 6 in. full scale (or 0.024 in. model scale).
- SRB separation motors were simulated on the aft skirt.
- A tunnel was simulated on the SRBs extending from the shoulder to the flare exit plane.
- Additional body flap and elevons were fabricated to simulate additional deflection angles.
- A metric wing was fabricated to OML 14414.1 Revs. C/D (Orbiter 102)
- A second ET (both nose and afterbody) was fabricated with no protuberances.

The nomenclature for the model and various attachments is as follows:

O ₂	102 Orbiter
W ₂	Wing
E ₂	Elevons
A _T	Attach structure on ET
P _N	ET nose with protuberances
P _A	ET afterbody with protuberances
W _N	ET nose with no protuberances
W _A	ET afterbody with no protuberances
S ₃ }	Balance in sting supported Orbiter.
T ₃ }	ET attached to sting supported SRBs.

The model was supported in the test section by three straight stings. One sting supported the Orbiter through its base on a six-component balance. The ET and SRBs (when present) were supported by the other two stings, through the SRB bases, with a dummy balance in each SRB. The three straight stings were all held in an adapter which, in turn, was mounted in the chuck of the tunnel sector. The Orbiter/ET attach structure (including feed lines) was mounted on the ET Model.

2.3 CONFIGURATIONS INVESTIGATED

Six configurations were used during this test. Three configurations had the Orbiter alone. Three configurations had the full Space Shuttle Launch Vehicle (SSLV). All six configurations and their variations from nominal SSLV configuration were:

$O_2W_2E_2$

No ET, SRBs or Orbiter/ET attach structure.

$O_2W_2E_2$ Wing Gap Waxed

The gap in the metric right wing filled with wax.

$O_2W_2E_2$ Wing Wax Cut

Wax separated from the Orbiter fuselage using a fine wire. The resulting gap was sealed by covering it with a thin layer of the wax.

$O_2W_2E_2W_NA_TT_3S_3$

No protuberances on the ET except nose probe, attach structure and the portion of the Orbiter/ET propellant feed lines, that extends between the Orbiter and ET behind the aft attach structure.

$O_2W_2E_2P_NP_AAT_3S_3$

Nominal SSLV configuration.

$O_2W_2E_2P_NP_AAT_3S_3$ with grit on wings

Grit placed on leading 10% of both upper and lower surfaces of each wing.

2.4 TEST PROGRAM

Table 1 lists the details of the test program. These are:

Configuration

Roll angle, ϕ

Mach number, M

DATE: 8/9/79

NASA-MSFC-MAF

For each combination of configuration and roll angle, the model was tested over a total angle of attack range of -8 to +8 deg, at Mach numbers of 0.60, 0.90, 1.05, 1.10 and 1.25, with $\delta_{EI} = 10$ deg, and $\delta_{EO} = 5$ deg. Body flap angle ranged from 0 to 16 deg. Table 2 lists the tunnel conditions for each of the five Mach numbers.

2.5 INSTRUMENTATION AND DATA REDUCTION

The parameters that were measured during the test were:

- Wind tunnel conditions (P_{∞} , P_t , T_t)
- Inclination of model support mechanism (sector angle)
- Preset model attitude, α'
- Six-component force and moment data for the Orbiter
- Three-component force and moment data for the right Orbiter wing
- Hinge moment for the left two Orbiter elevons.

The wind tunnel conditions and the angle of the model support mechanism were measured with the normal facility instrumentation. The preset model attitude, α' , was measured with an inclinometer. The six-component Orbiter force and moment data were measured using MSFC balance number 239. The balance capacities are presented in Table 3. The three-component wing force and moment data were measured with a strain gage balance. The balance was designed specifically for this application and consisted of a rectangular gaged beam, bolted on one end to the right (metric) wing and on the other end to the center section of the Orbiter wing assembly. Elevon hinge moments were measured using strain gages. The gages were mounted directly to flexures machined at the hinge line of the removable elevons. The flexure cut outs were partially filled with wax which was used to hold gage wires in place. Wing and elevon external contours were simulated using a thin Mylar film bonded across the flexure gap. Numerous problems with this film and the wax underneath it provides some doubt as to the consistency of the elevon gage readings.

The wind tunnel conditions were used to calculate the Mach number, the dynamic pressure, and the Reynolds number. The angle of the model support mechanism and the preset model attitude were used to calculate the model angle of attack and angle of side slip, with corrections made for sting and balance deflections. The force and moment data were converted to non-dimensional coefficients for the Orbiter, the Orbiter wing, and the two Orbiter elevons.

Table 2

TEST: FA 28 (TWT-656)			DATE: 8/9/79	
TEST CONDITIONS				
MACH NUMBER	REYNOLDS NUMBER (per unit length)	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)	STAGNATION PRESSURE (pounds/sq. inch)
0.60	4.95 x 10 ⁶	4.35	100	22
0.90	6.25	7.37	↓	↓
0.95	6.38	7.77	↓	↓
1.05	6.58	8.45	↓	↓
1.10	6.67	8.73	↓	↓
1.15	6.71	8.96	↓	↓
1.25	6.69	9.29	↓	↓
0.60	6.75 x 10 ⁶	5.93	100	30
0.90	8.52	10.06	↓	↓
1.05	8.97	11.53	↓	↓
1.10	9.09	11.90	↓	↓
1.25	9.12	12.67	↓	↓

Table 3
BALANCE CAPACITY

<u>MSFC 239 - Orbiter</u>			
	<u>Capacity</u>	<u>Accuracy</u>	<u>Coefficient Tolerance</u>
NF	200 lb	± 1.0 lb	± 0.016
SF	100 lb	± 0.5 lb	± 0.008
AF	50 lb	± 0.25 lb	± 0.004
PM	200 in-lb	± 0.99 in-lb	± 0.0031
RM	50 in-lb	± 0.25 in-lb	± 0.0018
YM	100 in-lb	± 0.49 in-lb	± 0.0016
<hr/>			
<u>Comments:</u> Accuracy based on $\pm 0.5\%$ of balance capacity. Tolerance based on $q = 10$ psi.			

2.6 REFERENCE DIMENSIONS AND CONSTANTS

<u>Symbol</u>	<u>Full Scale</u>	<u>Model Scale</u>
A_{BF}	142.6 ft ²	0.329 in ²
A_{bORB}	436.7 ft ²	1.006 in ²
b_w	78.056 ft	3.747 in.
\bar{C}_e	90.7 in.	0.3628 in.
\bar{C}	474.8 in.	1.8992 in.
i_b	14.75 deg	14.75 deg
L_{REF}	1290.3 in.	5.1612 in.
MRP (6-comp)	X_T 976 in.	3.904 in.
	Y_T 0 in.	0 in.
	Z_T 400 in.	1.600 in.
S_e	210.0 ft ²	0.4838 in ²
S_{REF}	2690.0 ft ²	6.198 in ²
\bar{X}_{bORB}	-1263.0 in.	-5.052 in.
\bar{X}_{BFORB}	-1329.7 in.	-5.319 in.
X_{TO}	-909.50 in.	-6.026 in.
\bar{Z}_{bORB}	-326.5 in.	-1.306 in.
Z_{TO}	-341.5 in.	-1.366 in.
MRP for Wing	$X_{O_{wing}}$ = 1307 in.	5.228 in.
	$Y_{O_{wing}}$ = 105 in.	0.420 in.
	$X_{O_{elevation}}$ = 1387 in.	5.548 in.

3. RESULTS AND DISCUSSIONS

The tabulated data, as well as plots of Orbiter total forces and moments and Orbiter wing and elevon data, are presented in the DATA MAN report (Ref. 2). Comparison plots of total forces and moments and wing and elevon data are presented in Appendix A of this report. Appendix B presents comparison plots of Orbiter forebody data. The following sections discuss the results of the rolling moment test (TWT-655), the effects of the Orbiter body flap, the effects on the Orbiter of the ET protuberances, and other effects investigated during TWT-656. It should be recognized that many of the increments seen in these data are less than the coefficient tolerances of the balance.

3.1 ROLL TEST

The objective of test TWT-655 was to determine the cause and possible aerodynamic alterations required to eliminate the Orbiter rolling moment couple. The four component balance that was used for this test was specifically designed for high sensitivity of rolling moment measurements. The other three components were of much less concern when it was originally designed.

Side force is a major component in the calculation of Orbiter rolling moment as normally published. Rolling moment must be transferred from the balance center to the SSLV moment reference point which is located on the center line of the External Tank. The inaccuracy of the balance side force caused the Orbiter rolling moment values to be less accurate than needed for publication of the data.

Incremental side force and rolling moment values were also judged unacceptable due to the non-symmetrical nature of the balance rolling moment data, while testing the Orbiter alone. The shifts were too large to be explained

by flow angularity. A series of model buildup runs was made. The Orbiter without wings or vertical tail still produced slightly non-symmetrical data, although the greatest shift was traced to the inboard elevons. It was decided that the balance must be changed.

3.2 EFFECT OF BODY FLAP

The effect of the body flap was analyzed by comparing data taken with the body flap at different deflections. The intent was to see if some reduction in forward Orbiter/ET attach point loads could be obtained by a change in the fixed body flap setting or a variation during the launch sequence. A reduction in Orbiter pitching moment was considered an indication of a reduction in attach point loads. Data at three different body flap settings (0, 8 and 16 deg) were available. Both an α sweep and a β sweep were made at each of these flap settings at each of several Mach numbers.

There proved to be very little beneficial effect due to body flap deflection. Orbiter pitching moment increment was near zero with a maximum of $-.015$ occurring at $M = 1.10$. At conditions where there was a variation of pitching moment with flap deflection, the variation was often not continuous (such as C_m greater at $\delta_{BF} = 8$ deg than at either $\delta_{BF} = 0$ or 16 deg). Figures 3 and 4 present examples of pitching moment variations. With the exception of the elevon hinge moments, all coefficient increments were small, inconsistent and often not continuous with variation of flap deflection. Elevon hinge moments showed definite differences at the different body flap deflections, however, they were not continuous in most cases and were not consistent between α and β sweeps. This inconsistency could have been caused by the elevon gap sealing problem discussed in Section 2.5.

Comparison plots of total coefficients are available in Appendix A with Orbiter static stability coefficients starting on page 163 and wing and elevon data starting on page 514. Comparison plots of Orbiter forebody data are presented in Appendix B, starting on page 73.

FA28. MSFC TWT 636. CONFIG. 02WZE2PNPAATT3S3 (112808)

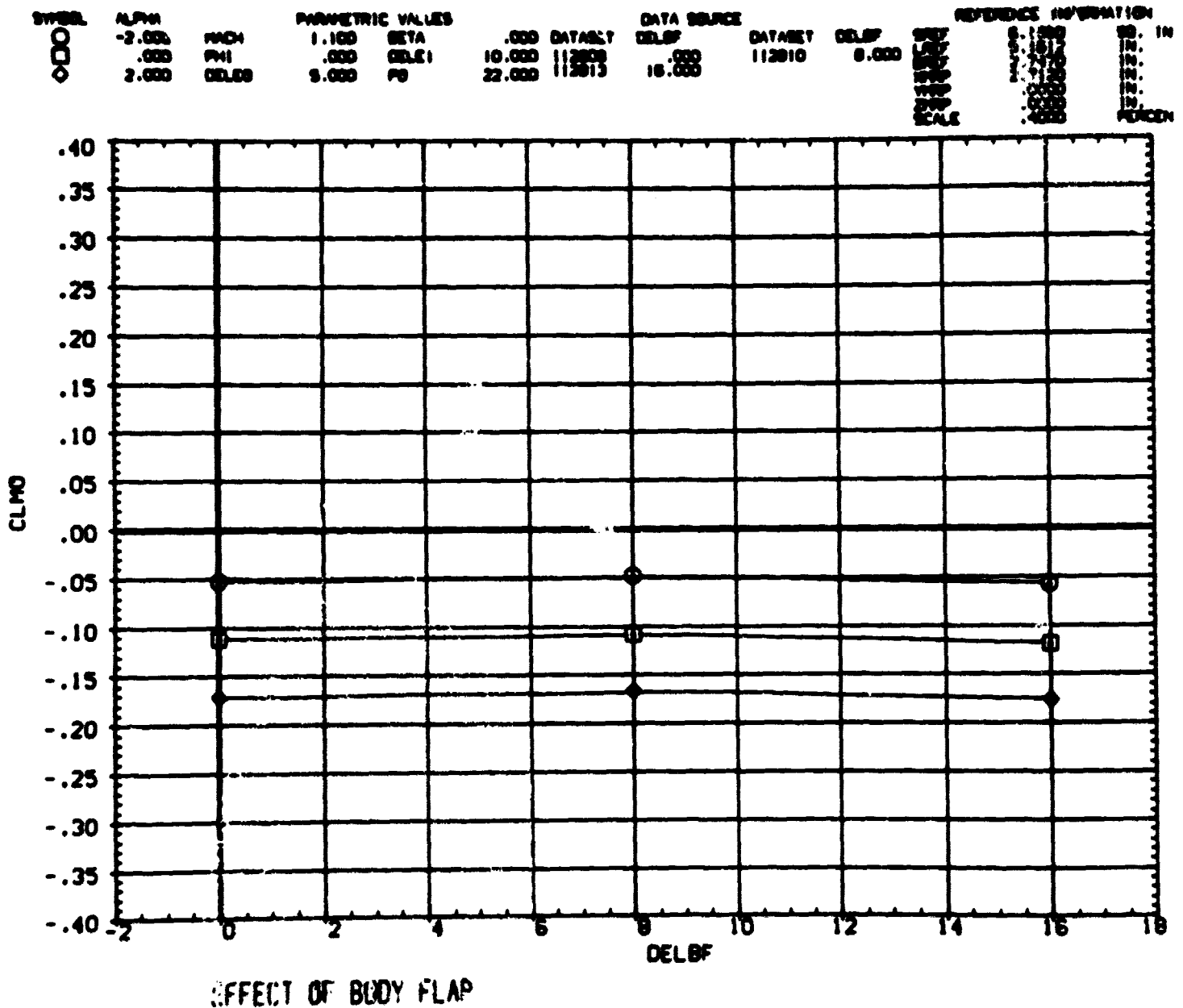


Fig. 3 - Orbiter Pitching Moment Coefficient vs Body Flap Deflection

3.3 EFFECT OF ET PROTUBERANCES

The effect of ET protuberances was obtained by comparing data taken with a model having scaled protuberances on the ET model with data taken using an ET model having no protuberances except a flight data system nose probe, Orbiter/ET attach structure and the portion of the Orbiter/ET propellant feed lines that extend between the Orbiter and ET behind the aft attach structure. Data were available from both α and β sweeps and at several Mach numbers.

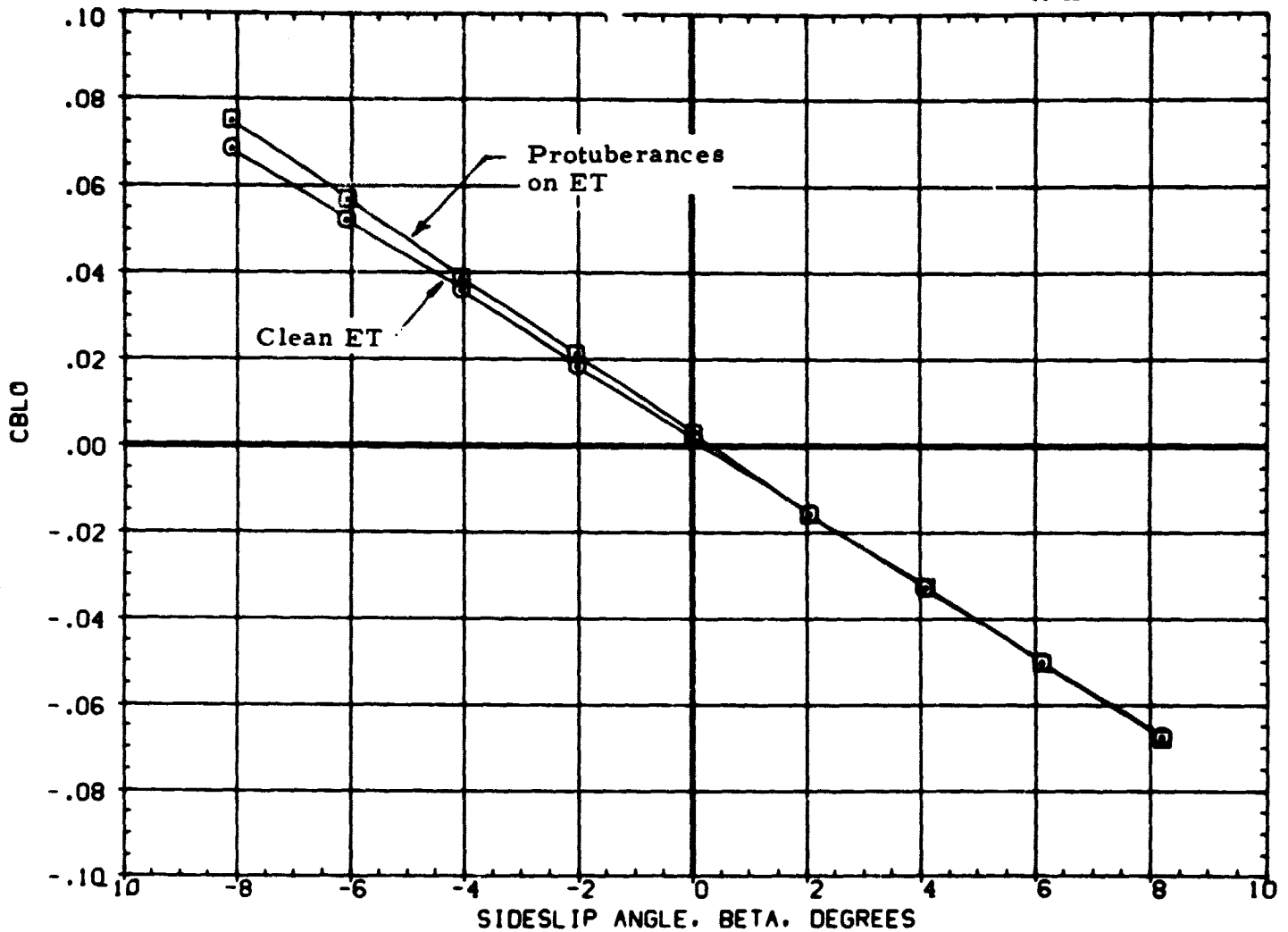
The original intent was to identify the cause of an Orbiter rolling moment couple found in previous tests. The rolling moment balance used in TWT-655 proved to be unsatisfactory as explained in Section 1.2 except for taking deltas between runs. Therefore, the only static stability data available for this comparison were taken using MSFC balance No. 239.

ET protuberances created a positive rolling moment increment at negative angles of sideslip (Fig. 5) but there was little or no change through the angle of attack range (Fig. 6) at $\beta = 0$. Normal force coefficient showed a negative increment of between 0.01 and 0.03 except for $\beta \leq -6$ deg (Figs. 7 and 8). Orbiter pitching moment coefficient was increased due to ET protuberances with the increment being typically between +0.01 and +0.02 (Fig. 9). Both Orbiter side force and yawing moment showed small increments. The trend in side force was toward a positive increment due to ET protuberances (Fig. 10). The trend in yawing moment was toward a negative increment (Fig. 11). Orbiter axial force increment (Figs. 12 and 13) varied in both magnitude and sign. Previous tests have shown that these axial force increments are within the accuracy band.

The ET protuberances decreased the Orbiter wing normal coefficient a maximum of -.02 at negative β (Fig. 14). There was little effect at positive β . The decrement was rather constant over the α range with a trend toward a smaller decrement at increased Mach numbers. Trends in wing bending

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2005) □ FA20. MPFC TVT 030. CONF 10. 030224PAATT333
 (FB2006) □ FA20. MPFC TVT 030. CONF 10. 030224PAATT333

REFERENCE INFORMATION
 SIZE 6.1280 SQ. IN.
 LENGTH 3.1612 IN.
 WIDTH 3.7470 IN.
 THICK 2.7120 IN.
 YAW .0000 IN.
 ROLL .0000 IN.
 SCALE .0000 PERCENT



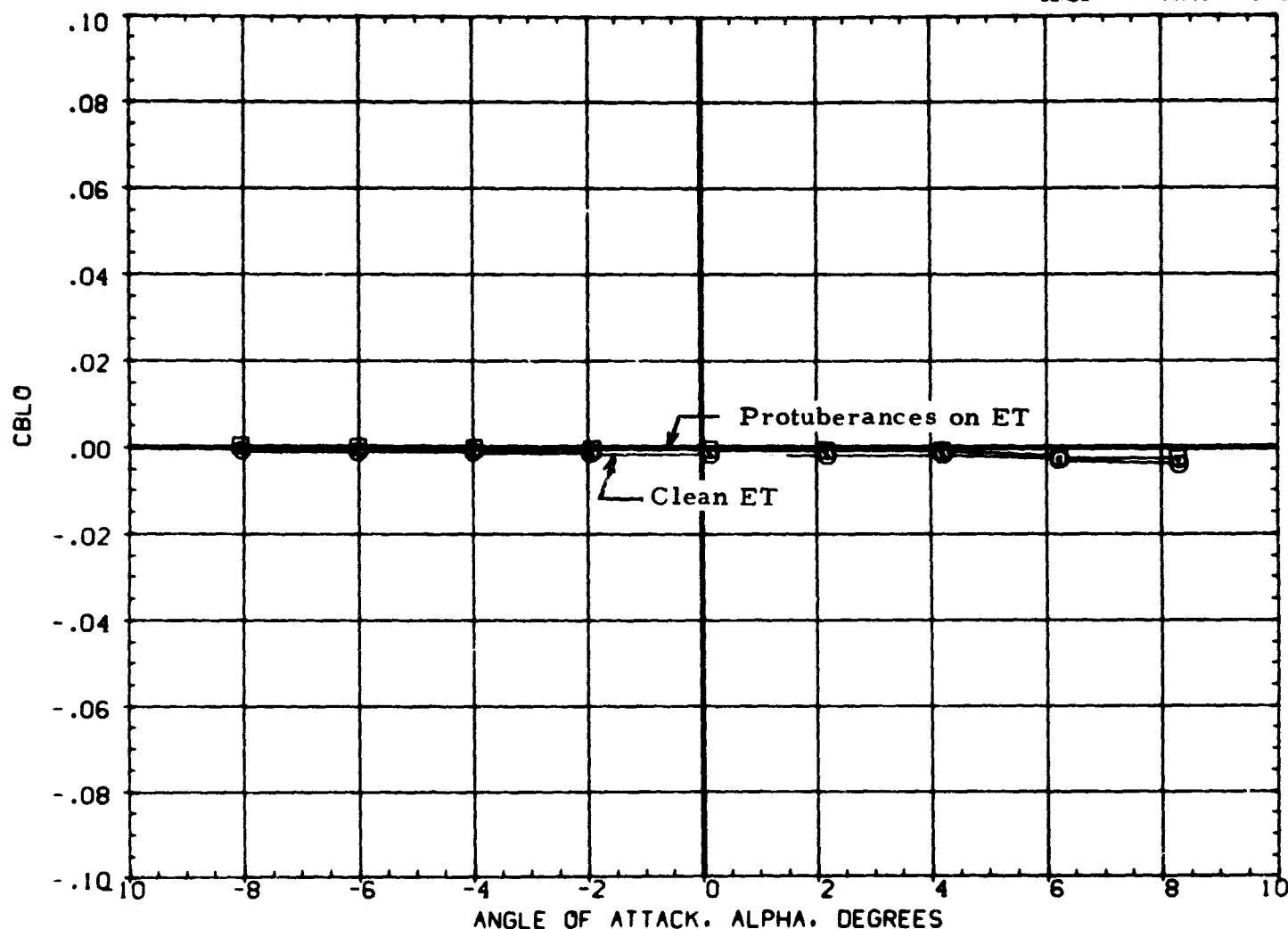
EFFECT OF ET PROTUBERANCES

(C)MACH = 1.05

Fig. 5 - Effect of ET Protuberances on Orbiter Rolling Moment Coefficient vs Angle of Sideslip

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (F82803) 8 FA28. MSFC TWT 636. CONF IG. 02N2E2YMAA11J53
 (F82808) 8 FA28. MSFC TWT 636. CONF IG. 02N2E2YMAA11J53

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



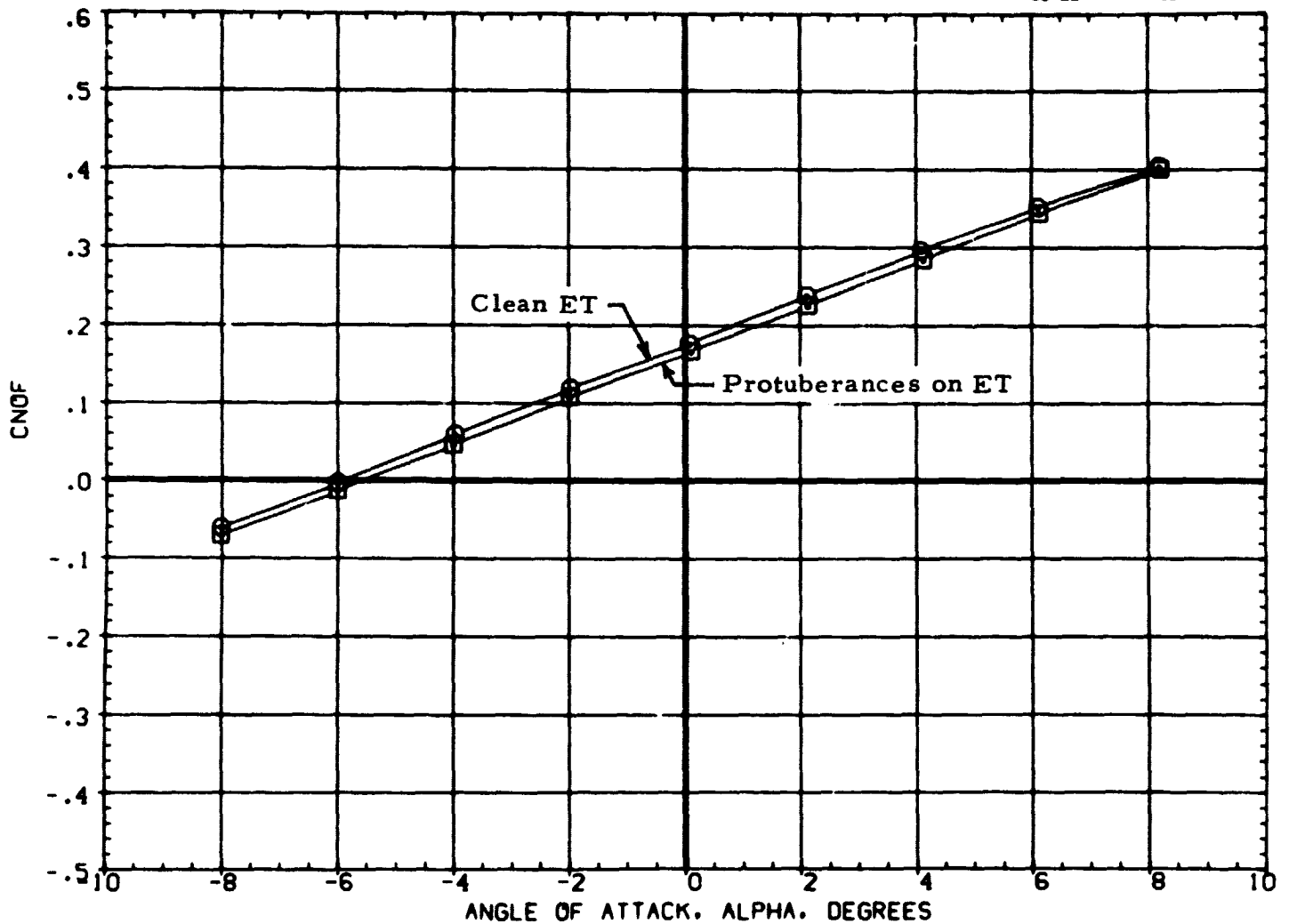
EFFECT OF ET PROTUBERANCES

(D)MACH = 1.05

Fig.6 - Effect of ET Protuberances on Orbiter Rolling Moment Coefficient vs Angle of Attack

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2605) □ FA28. HBFC TVT 835. CONF 10. 02V2E200MAATT353
 (FB2608) □ FA28. HBFC TVT 835. CONF 10. 02V2E200MAATT353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



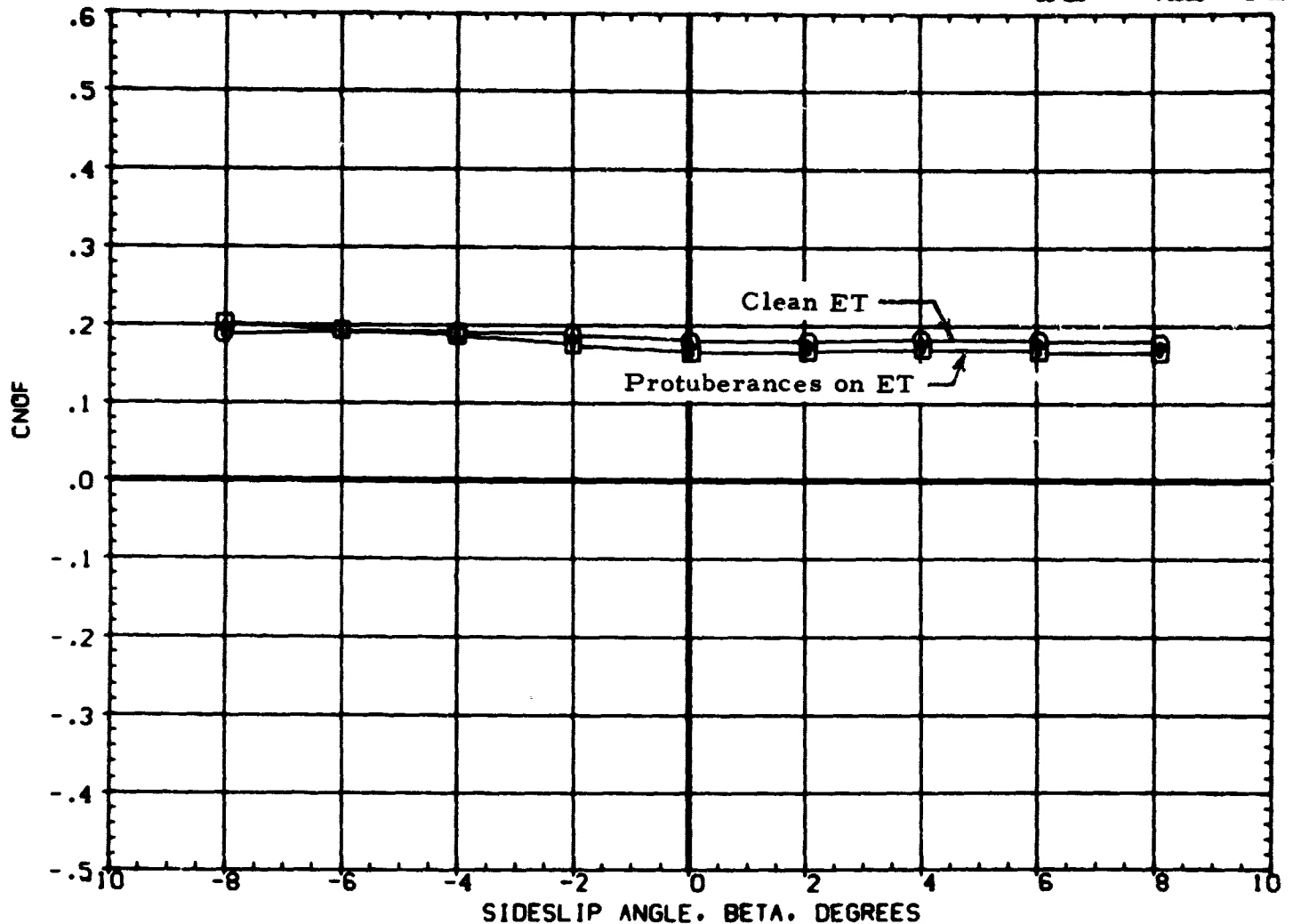
EFFECT OF ET PROTUBERANCES

(A) MACH = .60

Fig. 7 - Effect of ET Protuberances on Orbiter Normal Force Coefficient vs Angle of Attack

DATA SET SYMBOL CONFIGURATION DESCRIPTION
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 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF ET PROTUBERANCES

(A)MACH = .60

Fig. 8 - Effect of ET Protuberances on Orbiter Normal Force Coefficient vs Angle of Sideslip

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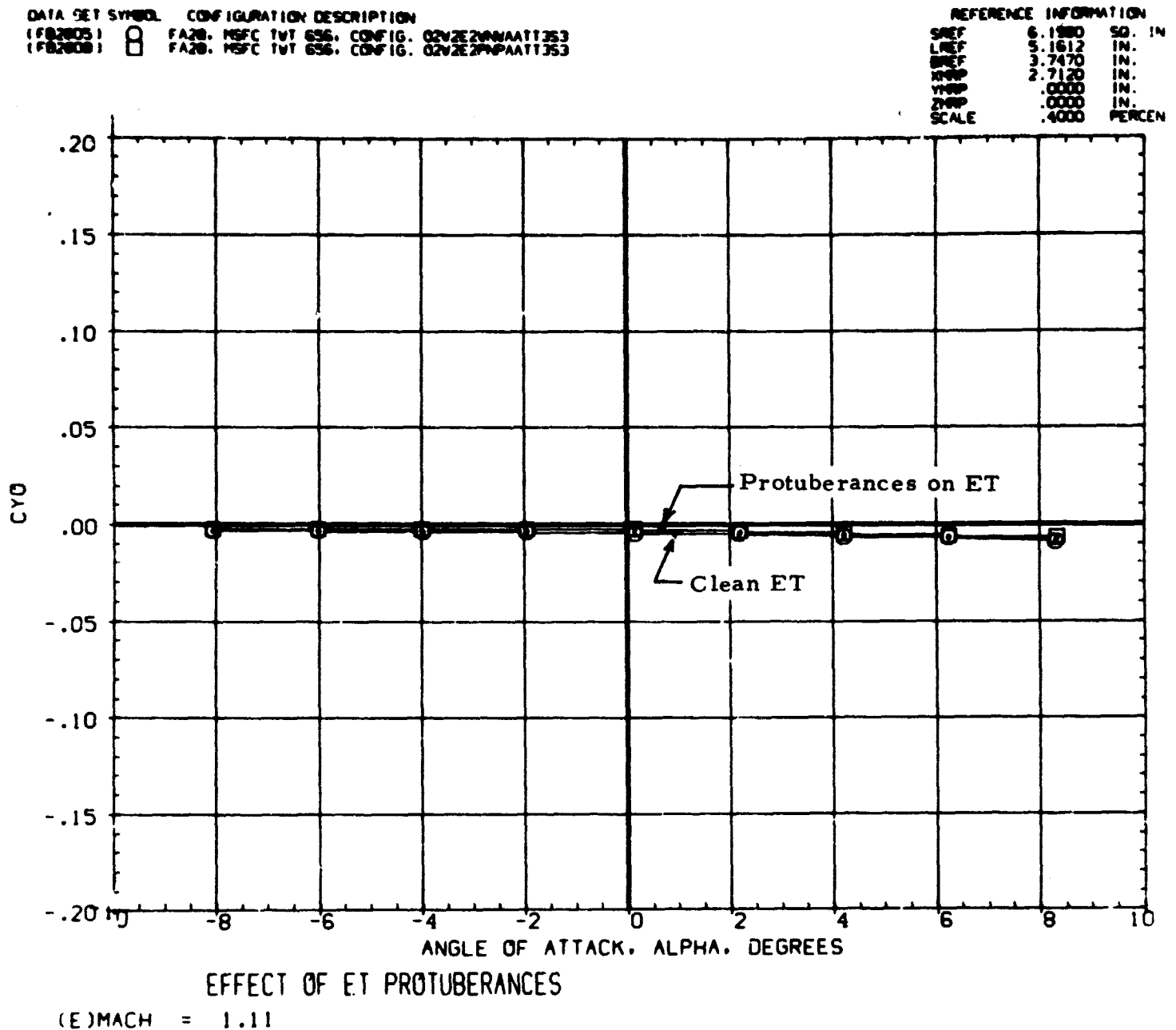
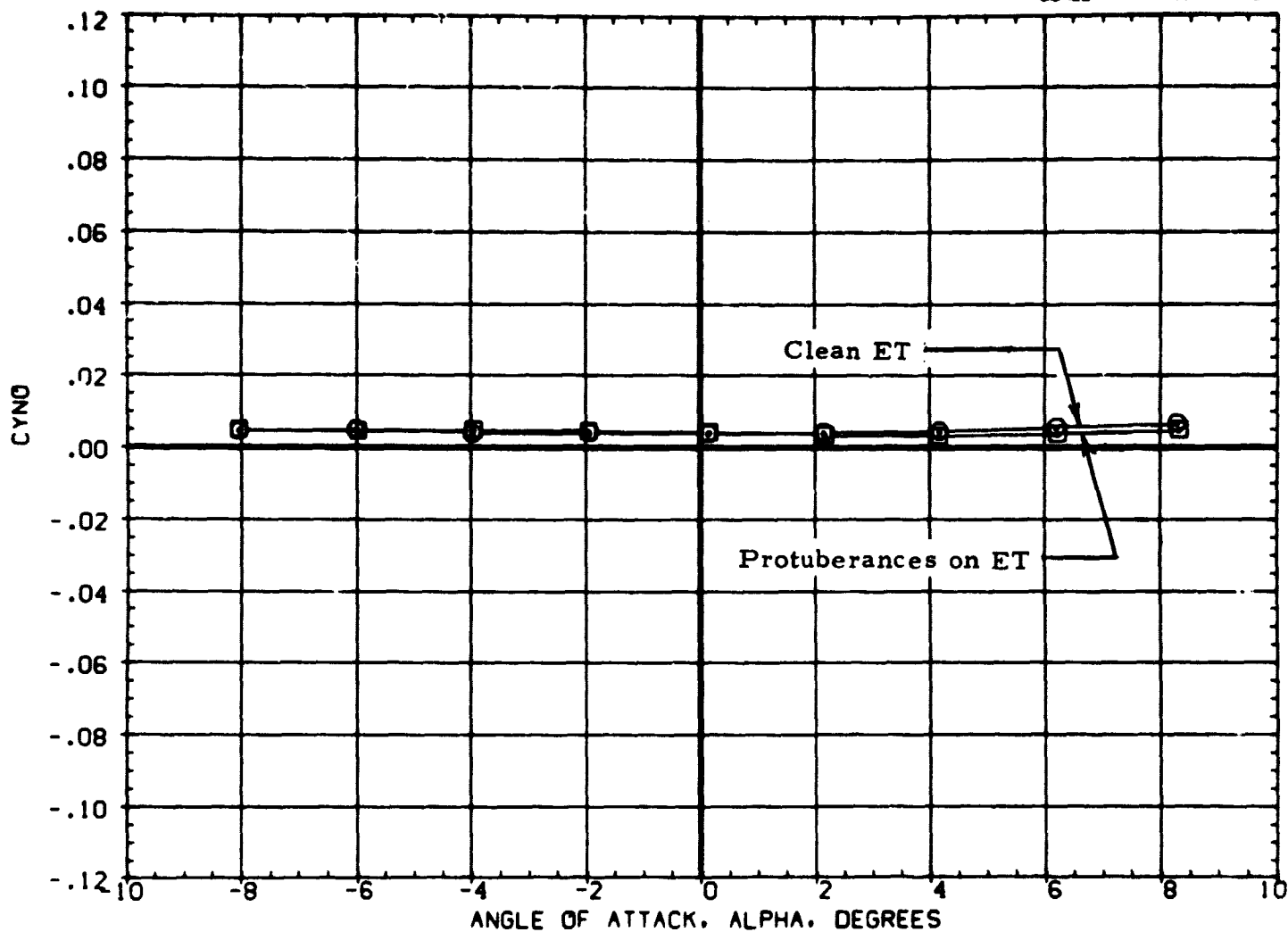


Fig.10 - Effect of ET Protuberances on Orbiter Side Force Coefficient

DATA SET SYMBOL CONFIGURATION DESCRIPTION
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 (PB2008) 8 FA20. HPC TVT 650. CONF 10. 02V2E2WMAATT353

REFERENCE INFORMATION
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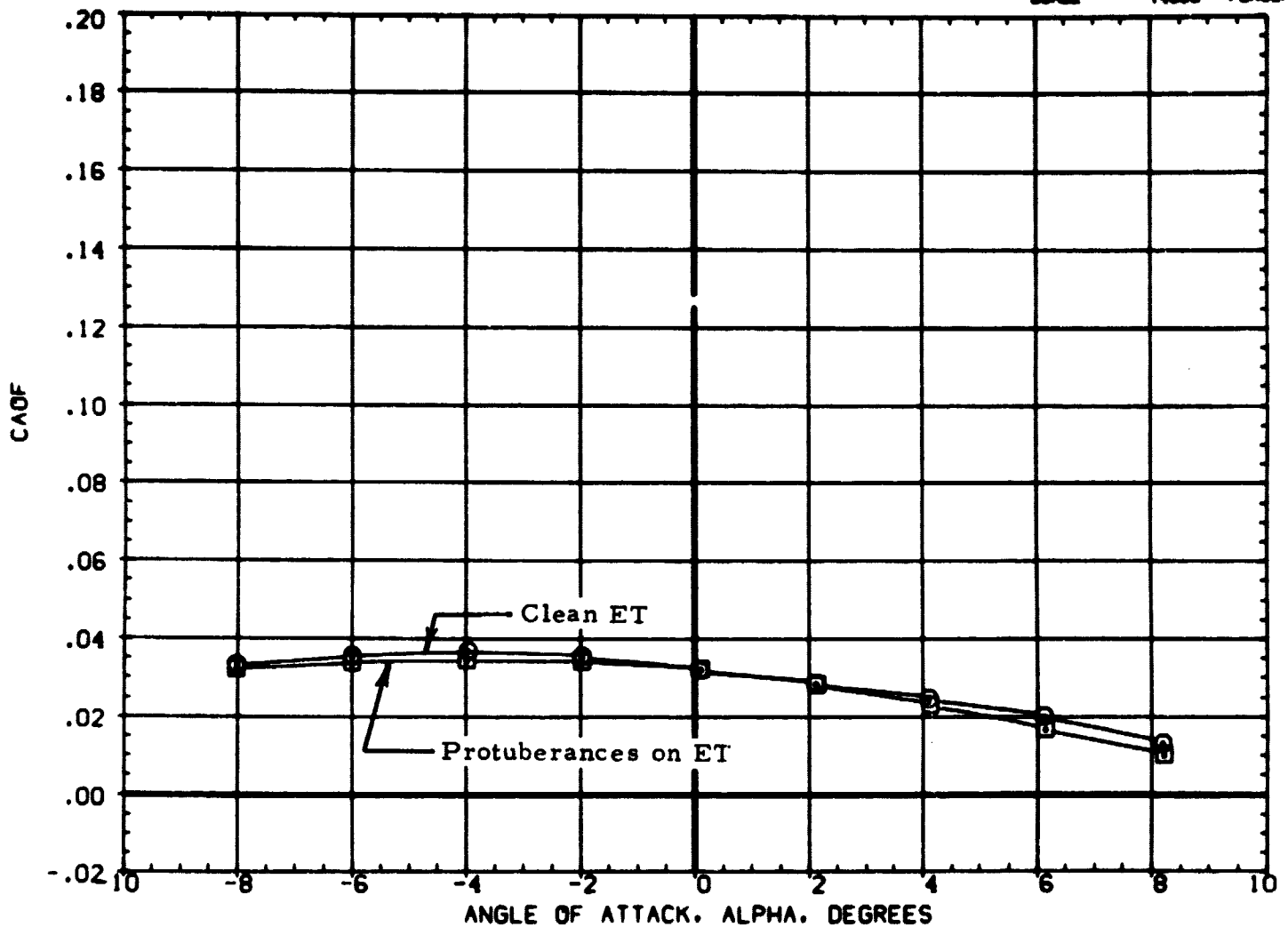
EFFECT OF ET PROTUBERANCES

(B)MACH = .90

Fig. 11 - Effect of ET Protuberances on Orbiter Yawing Moment Coefficient

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
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(F80000)	FA20. HPC TVT 000. CONF10. GV2220MAATT303

REFERENCE INFORMATION		
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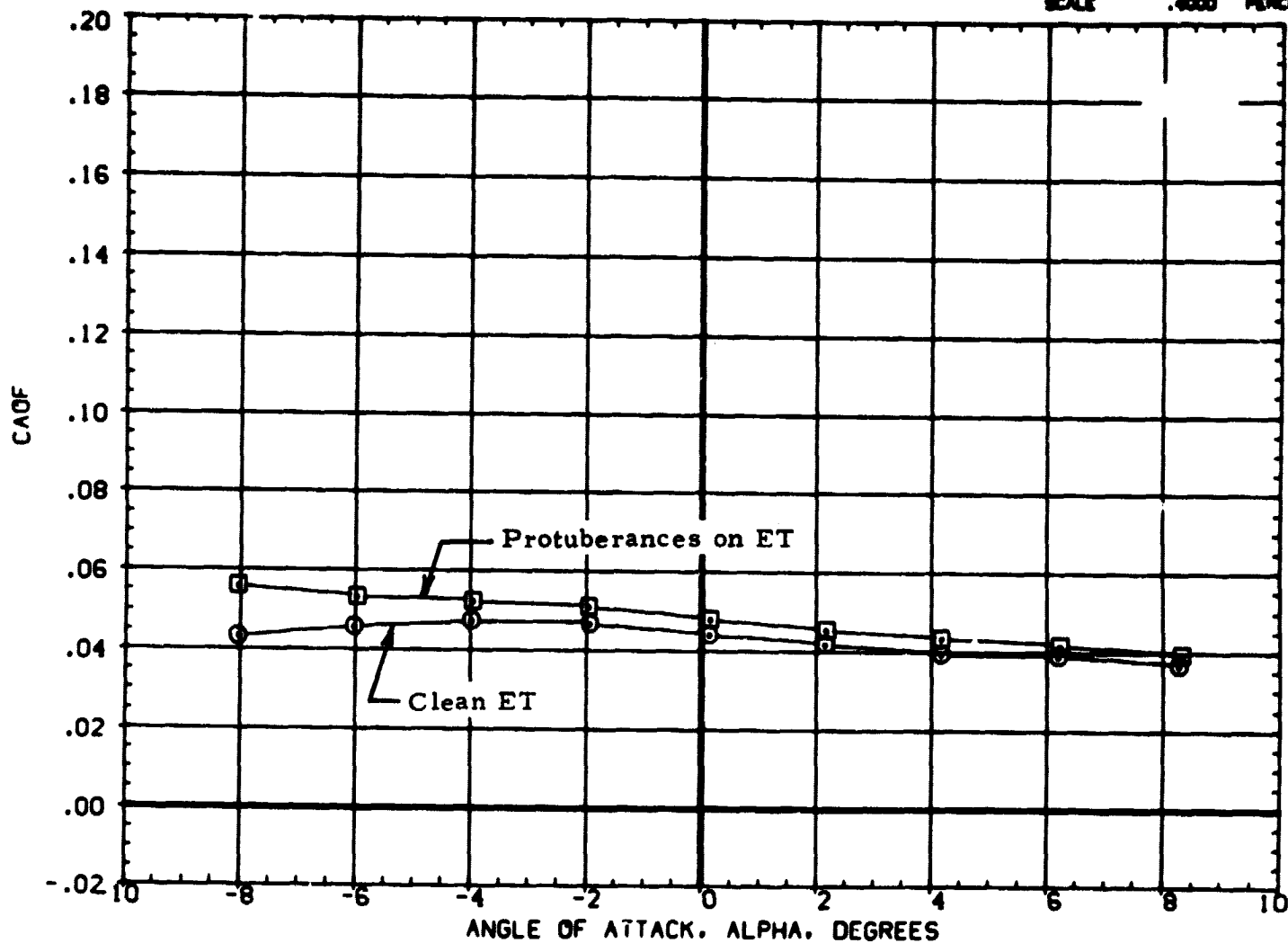
EFFECT OF ET PROTUBERANCES

(A)MACH = .60

Fig.12 - Effect of ET Protuberances on Orbiter Axial Force Coefficient at $M = 0.60$

DATA SET SYMBOL CONFIGURATION DESCRIPTION
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REFERENCE INFORMATION
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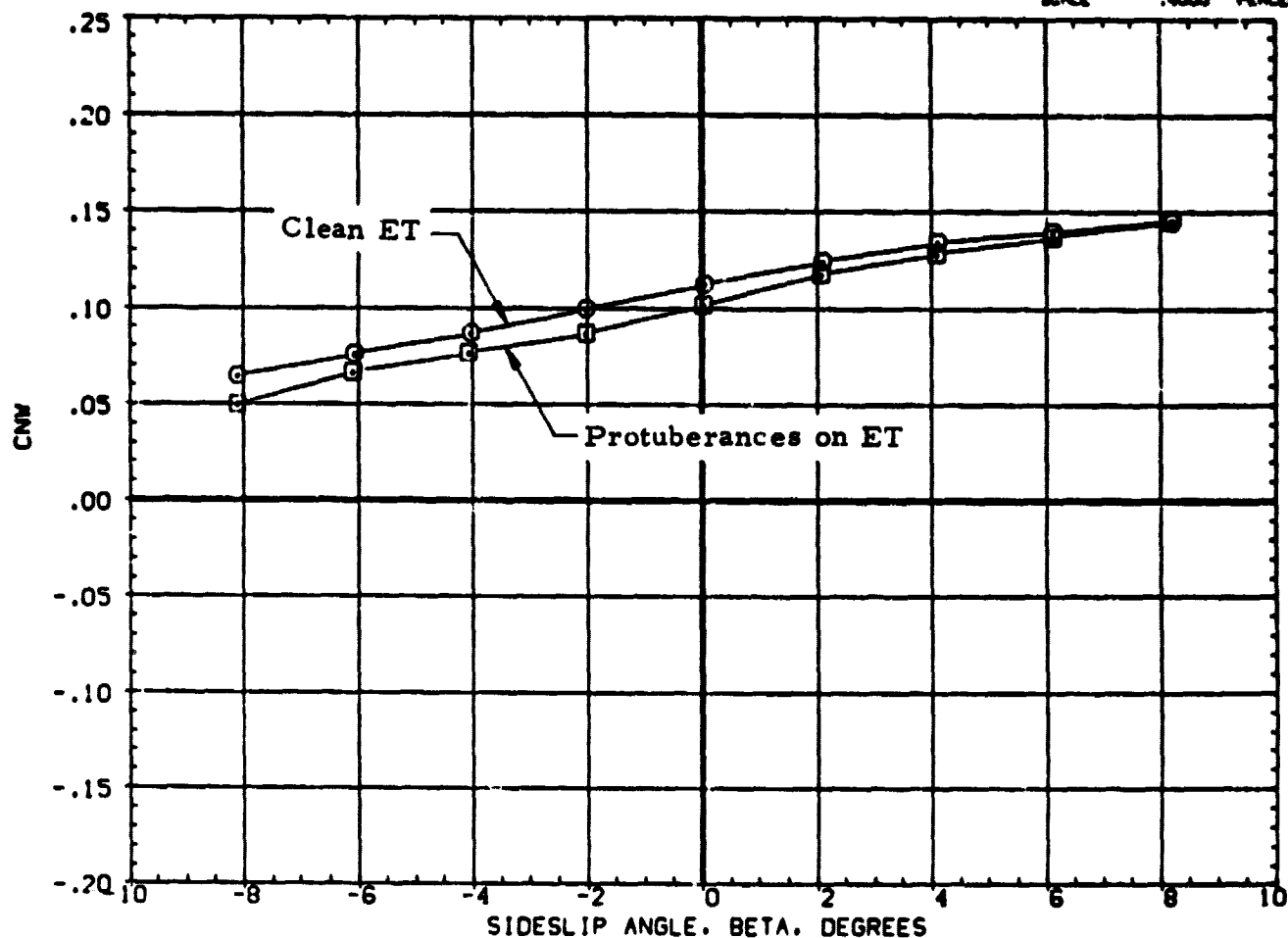
EFFECT OF ET PROTUBERANCES

(B)MACH = .90

Fig. 13 - Effect of ET Protuberances on Orbiter Axial Force Coefficient at M = 0.90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
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 (FA3958) 8 FA39: HREC TVT 636: CONF10: 02V2E20MMATT263

REFERENCE INFORMATION
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 LWT 0.1612 IN.
 HWT 0.2470 IN.
 TWT 0.2120 IN.
 TWT 0.0000 IN.
 TWT 0.0000 IN.
 SCALE 0.0000 PERCENT



EFFECT OF ET PROTUBERANCES
 (D)MACH = 1.10

Fig.14 - Effect of ET Protuberances on Orbiter Wing Normal Force Coefficient at M=1.10

(Fig. 15) and wing torsion (Fig. 16) follow that of wing normal force with maximum coefficient decrements of $-.002$ and $-.004$. The effect of ET protuberances on inboard elevon hinge moments was not consistent, with poor correlation between α and β sweeps. This may be related to the elevon gap sealing problem discussed in Section 2.5. Outboard elevon hinge moments were also inconsistent at subsonic Mach numbers. At supersonic Mach numbers (Fig. 17) there was a slight decrease at positive β with a maximum hinge moment coefficient increment of $.008$ at negative β .

Comparison plots of total coefficients can be found in Appendix A with Orbiter static stability coefficients starting on page 91 and wing and elevon data starting on page 454. Comparison plots of Orbiter forebody data are presented in Appendix B, starting on page 1.

3.4 OTHER EFFECTS

During the conduction of the test, there was concern as to the validity of the data and the possible introduction of effects other than that being investigated. To gain understanding, several additional runs were made. Runs were made with the gap in the Orbiter metric right wing unsealed, as well as the nominal case of being sealed with wax. A series of runs was made at an increased Reynolds number. A series of runs was also made with the leading 10% of the Orbiter wings covered with grit, both top and bottom.

3.4.1 Wax in Wing Gap

As described in Section 2.3, the Orbiter was tested alone with and without wax in the gap, and with the wax cut, but sealed, to reduce resistance to wing balance deflections. Most of test TWT-656 was run with wax cut.

There seemed to be no trend to the effect of the wax on Orbiter static stability coefficients at $M=0.9$. At $M=1.25$, there was no apparent trend in C_N but C_m , C_Y , C_l and C_{A_T} all showed a trend toward small positive increments. C_{Y_m} showed a negative trend. Maximum increments were:

DATA SET SYMBOL CONFIGURATION DESCRIPTION
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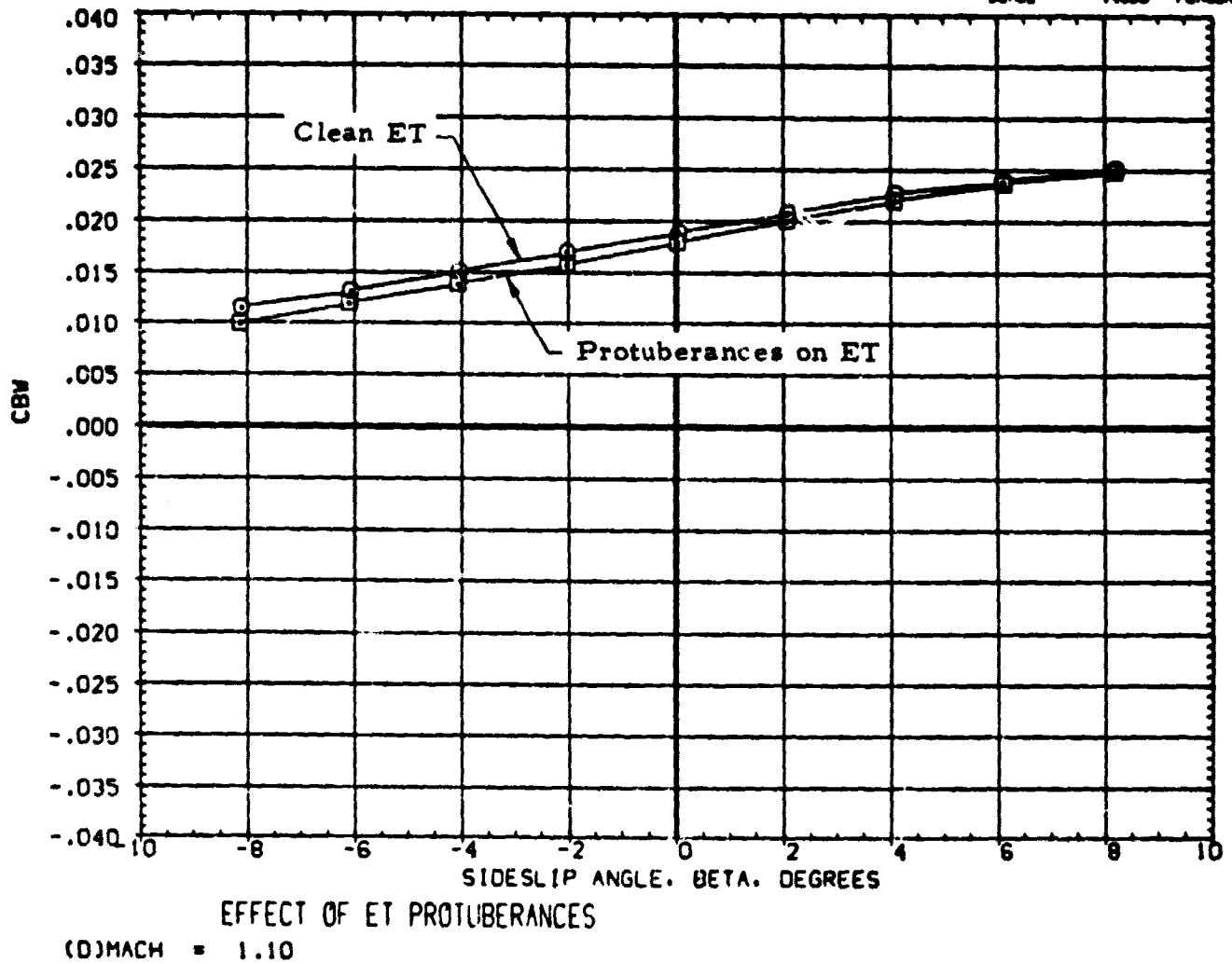


Fig. 15 - Effect of ET Protuberances on Orbiter Wing Bending Moment Coefficient at M = 1.10

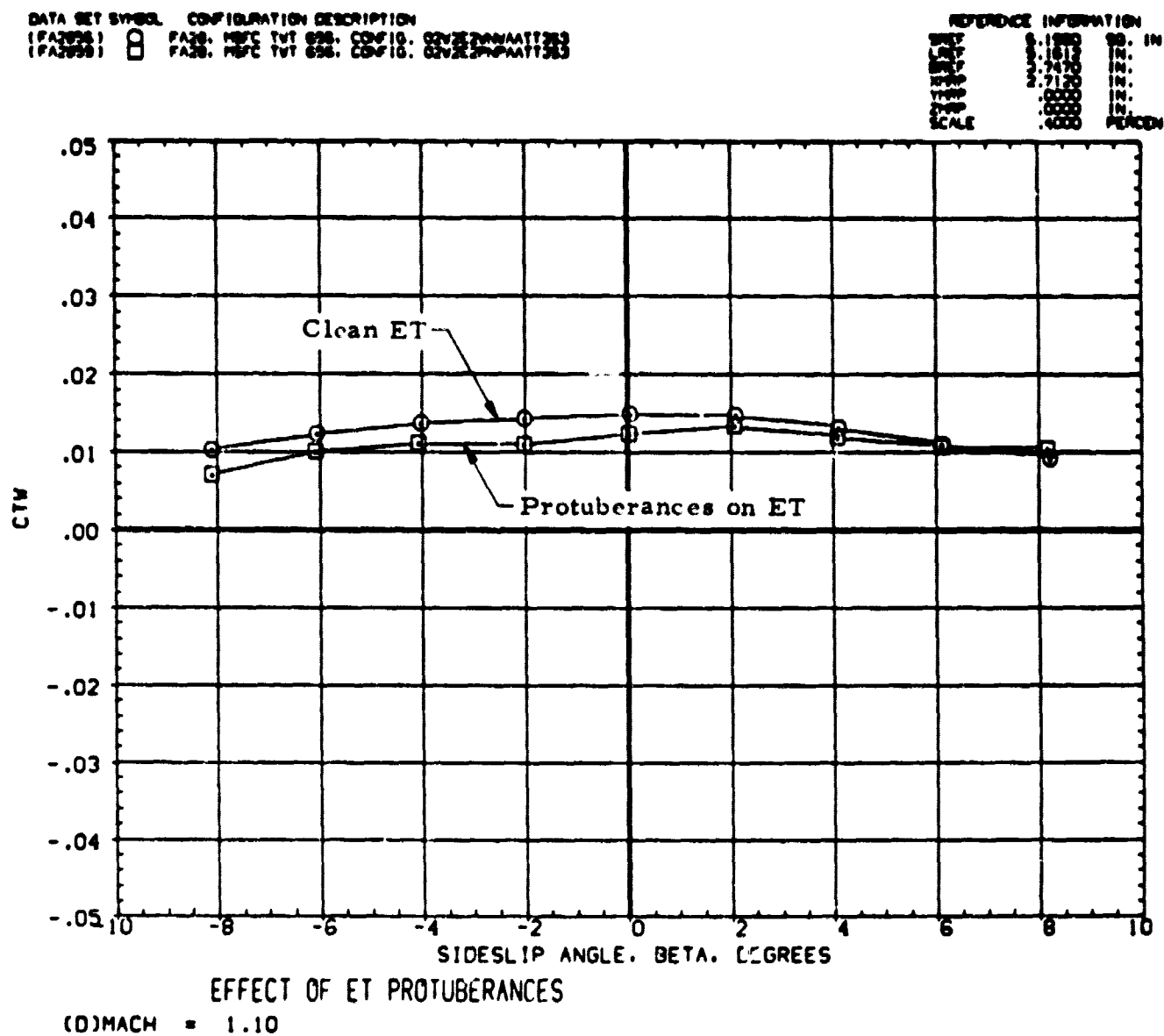


Fig. 16 - Effect of ET Protuberances on Orbiter Wing Torsional Moment Coefficient at $M=1.10$

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
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REFERENCE INFORMATION		
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TIME	0000	IN.
TIME	0000	IN.
SCALE	.4000	PERCENT

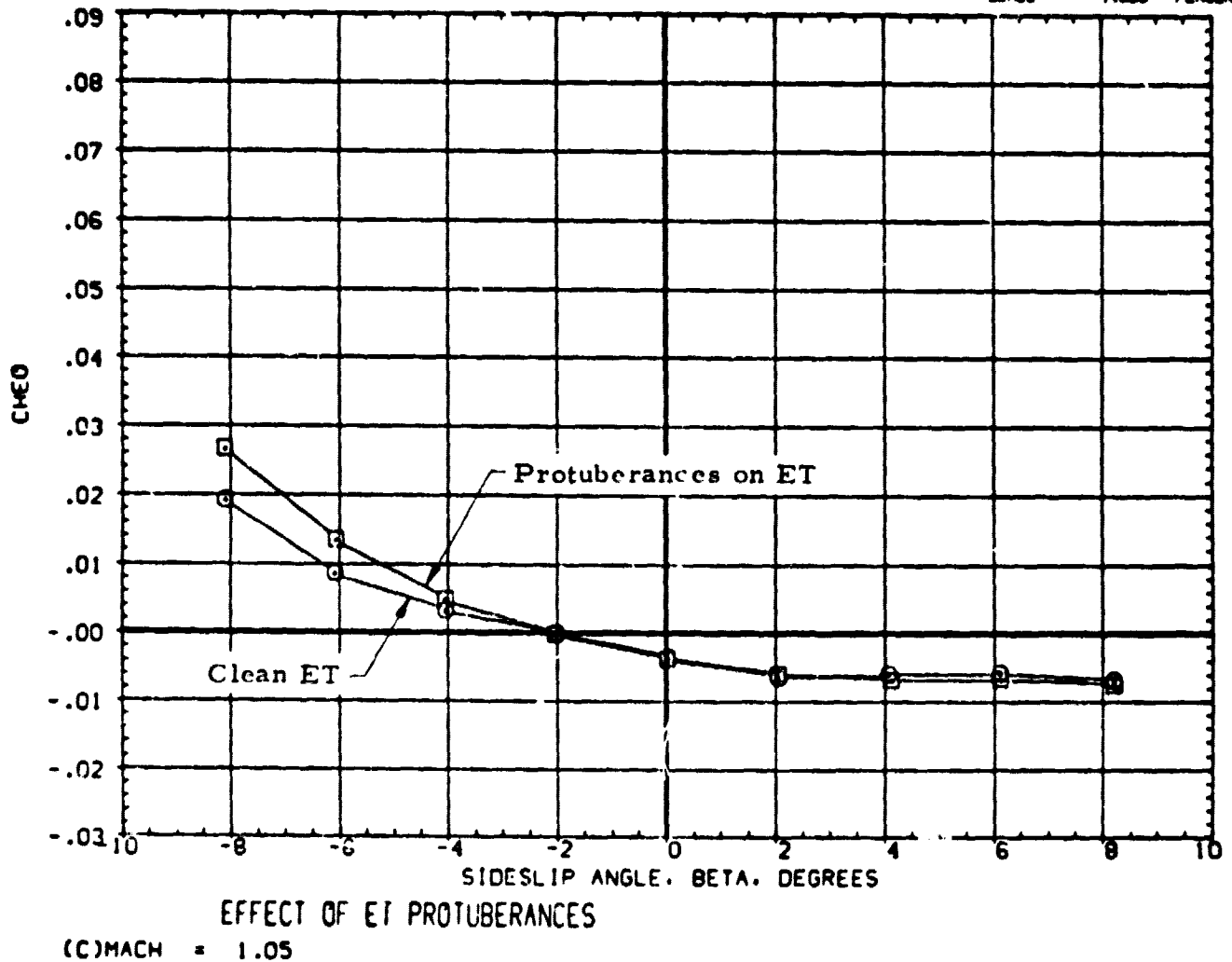


Fig. 17 - Effect of ET Protuberances on Outboard Elevon Hinge Moment Coefficient at $M = 1.05$

$$\begin{aligned}
 \Delta C_N &= 0.0 \\
 \Delta C_m &= +0.01 \\
 \Delta C_Y &= +0.01 \\
 \Delta C_{Y_m} &= -0.01 \\
 \Delta C_l &= +0.002 \\
 \Delta C_{A_T} &= +0.005
 \end{aligned}$$

In many cases the values for the model with the wax cut seemed to match most closely the values for the model with "no wax". Orbiter wing data showed little or no trend with the possible exception of C_{T_w} . As with the static stability data, the "cut wax" data matched the "no wax" data closer than it matched the "solid wax" data. This may verify wing balance interference due to the "solid wax," or a failure of the "cut wax" to effectively seal the wing gap. Elevon data showed differences due to wing wax that are hard to comprehend as the gaged elevons were on the left side of the Orbiter model and the metric wing and wing gap were on the right. Again, we must consider the elevon gap sealing problem discussed in Section 2.5 as the possible source.

Wing wax comparison plots are available in Appendix A starting on page 1 for the static stability data and on page 379 for the wing and elevon data.

3.4.2 Reynolds Number Variation and Grit on Wings

A series of runs was made at an increased Reynolds number, and also with grit on the Orbiter wings, to see if transition on the two Orbiter wings was not symmetrical. This might explain data which did not cross through zero at zero angle of side slip.

There were some trends seen in the longitudinal coefficients. Lateral coefficients, which were of primary interest, did not show any consistent

trends. C_{N_w} and C_{B_w} did show a trend toward a small positive increment with increased Reynolds number but the difference in level between α and β sweeps was greater than would be expected due to just flow angularity. Grit on the wings produced a small decrease in C_{N_w} and C_{B_w} .

Reynolds number comparison plots are presented in Appendix A starting on page 235 for the static stability coefficients and page 574 for the wing and elevon coefficients.

Comparison plots showing the effects of wing grit are also presented in Appendix A with the static stability coefficients starting on page 307 and the wing and elevon coefficients starting on page 634.

4. CONCLUSIONS

The following conclusions are drawn from the analysis of the data obtained:

1. The smallness of the effect of Orbiter body flap deflection on Orbiter longitudinal stability coefficients, indicates that the flap cannot be used to reduce the forward Orbiter/ET attach point loads.
2. ET protuberances induce a positive Orbiter rolling moment under certain conditions. The balance was not sensitive enough to fully study this effect.
3. ET protuberances induce increases in Orbiter pitching moment and side force coefficient and decreases in normal force, yawing moment, axial force, wing normal force, wing bending moment and wing torsion coefficients. Outboard elevon hinge moment coefficient showed a slight decrease at positive angles of side slip and slight increase at negative angles of side slip for supersonic Mach numbers.
4. Wax in the wing gap produces small increments in Orbiter static stability coefficients at $M = 1.25$ but not at $M = 0.9$. There is indication that the "cut wax" (which was used during most of the test) did not effectively seal the wing gap.
5. Neither Reynolds number variation nor grit on the wings produced the increments in the Orbiter lateral coefficients that could explain non-zero values at zero angle of side slip. They did, however, produce changes in Orbiter loads and Orbiter wing loads.

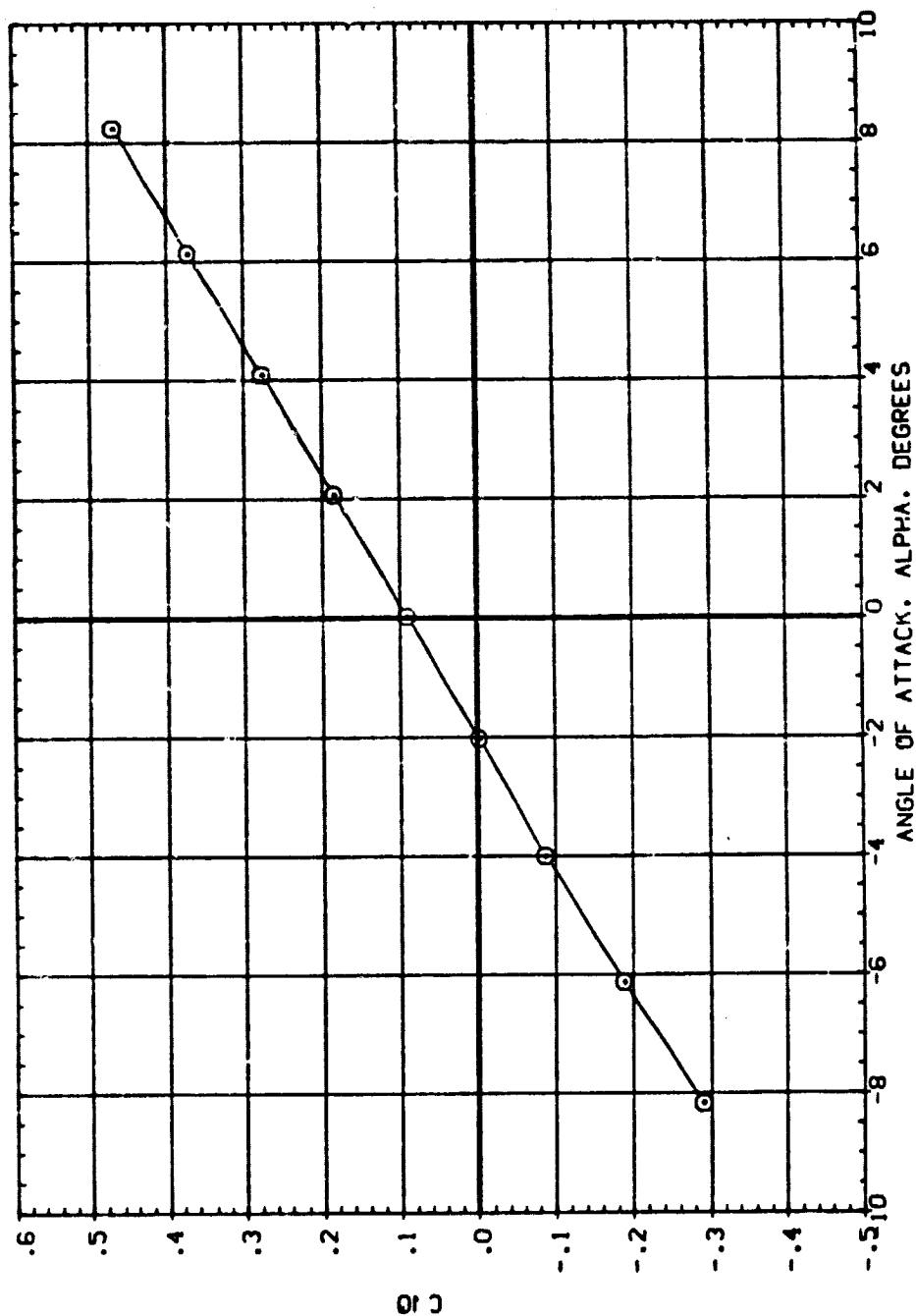
REFERENCES

1. Rawlinson, Edward G., "Pretest Information for a Space Shuttle Launch Vehicle Test in the MSFC 14 x 14-Inch Trisonic Wind Tunnel (TWT 655, 656 and 657)," LMSC-HREC TM D568893, Lockheed Missiles & Space Company, Huntsville, Ala., February 1979.
2. Braddock, W. F., "Data Report for Wind Tunnel Test FA 28 (TWT-656)," LMSC-HREC TR D697723, Lockheed Missiles & Space Company, Huntsville, Ala., November 1979.
3. Simon, Erwin, The George C. Marshall Space Flight Center's 14 x 14-Inch Trisonic Wind Tunnel Technical Handbook, NASA TM X-53185, 22 December 1964.
4. Allen, E. C., "Pretest Report for an Investigation in the MSFC TWT to Determine the Effects of a Multiple Sting Support System on the Mated Vehicle Aerodynamic Characteristics Utilizing the 0.004-Scale Model (74 OTS) of the Shuttle Vehicle 5 Configuration (IA-OTS) of the Shuttle Vehicle 5 Configuration (IA-140)," SD 75-SH-0272, Rockwell International Space Division, Southern Region Office, December 1975.

Appendix A
TOTAL STATIC STABILITY DATA
WING AND ELEVON DATA

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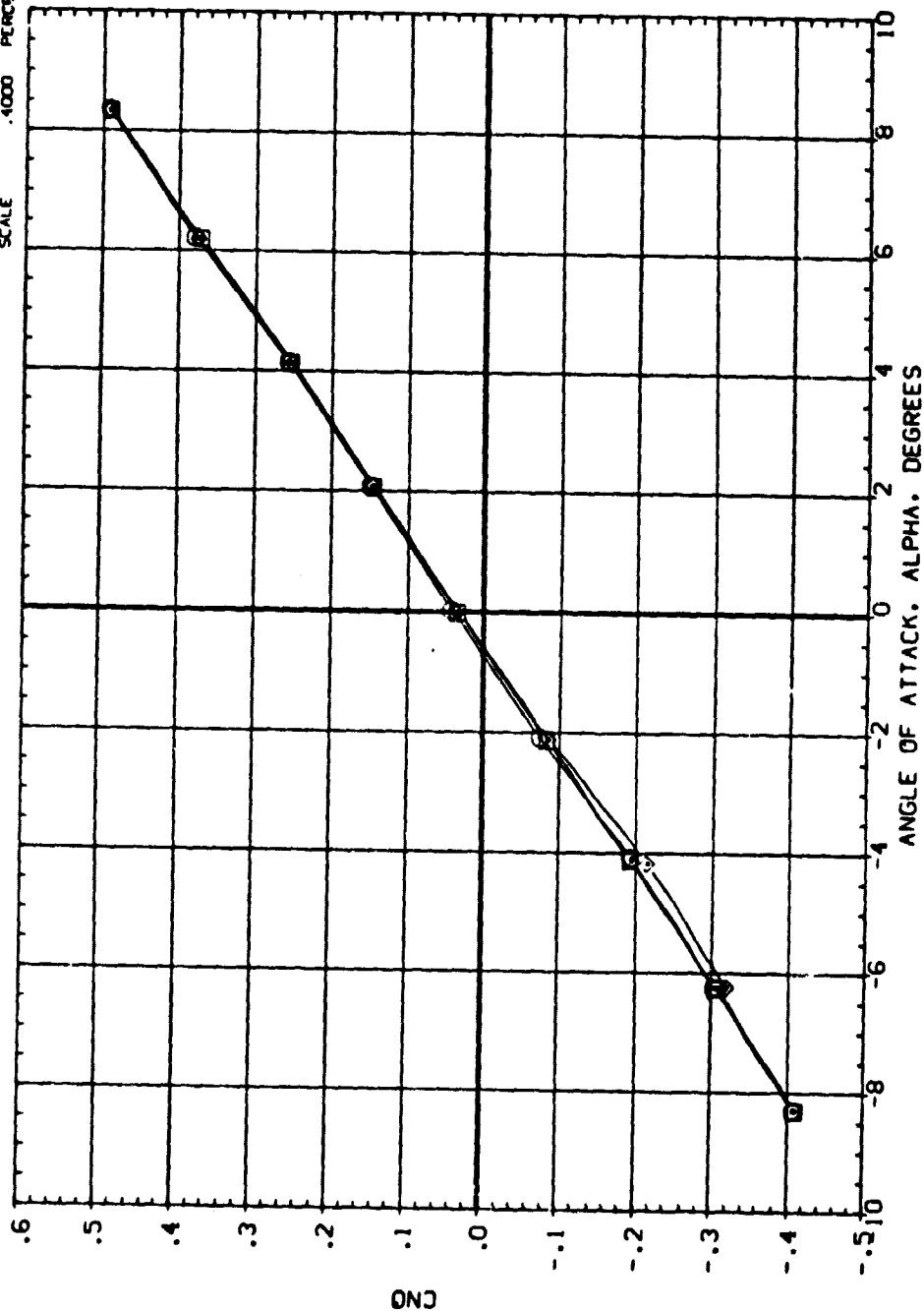


EFFECTS OF WING WAX

(M)MACH = .60

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REFERENCE INFORMATION
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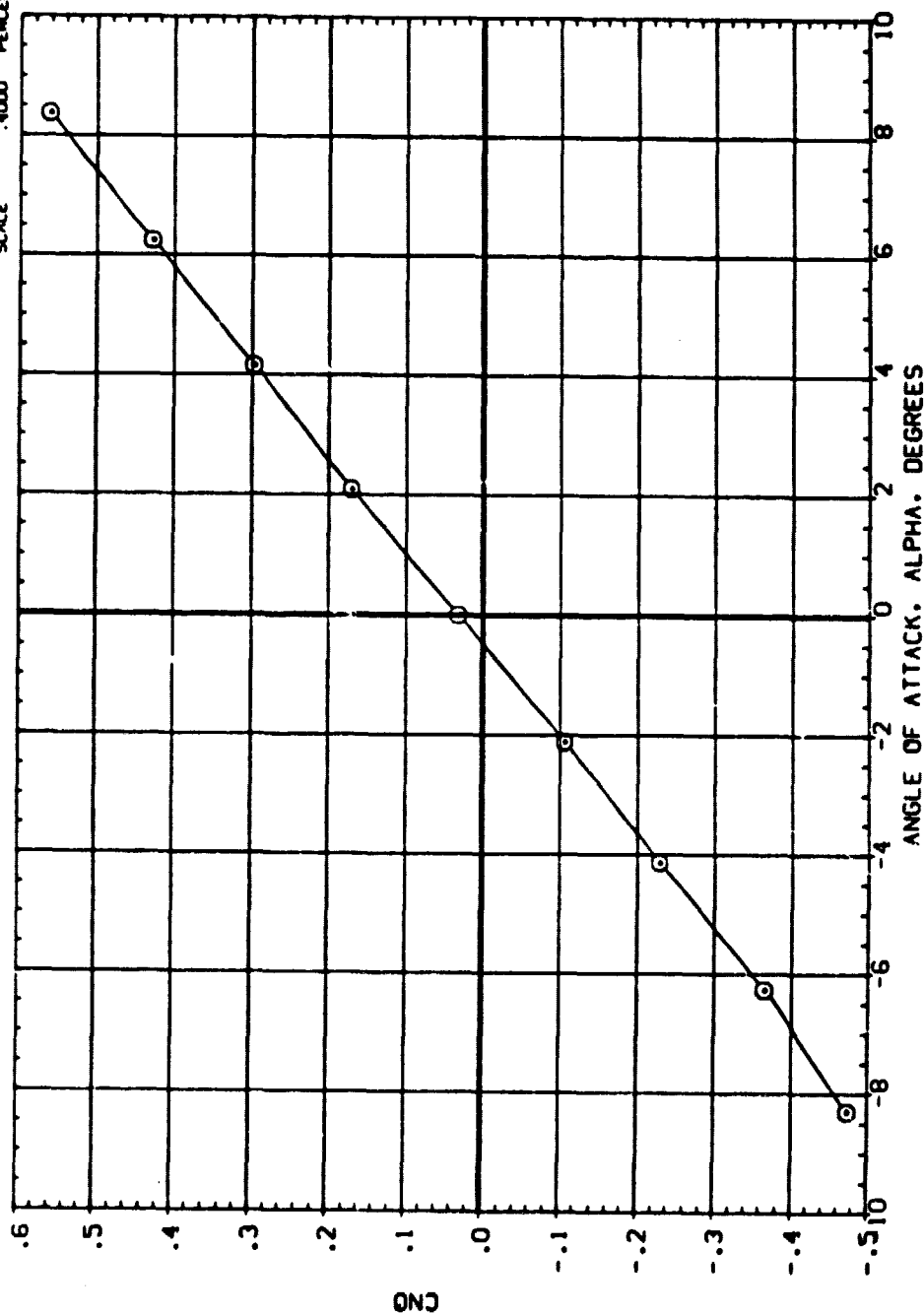
EFFECTS OF WING WAX

(B)MACH = .90

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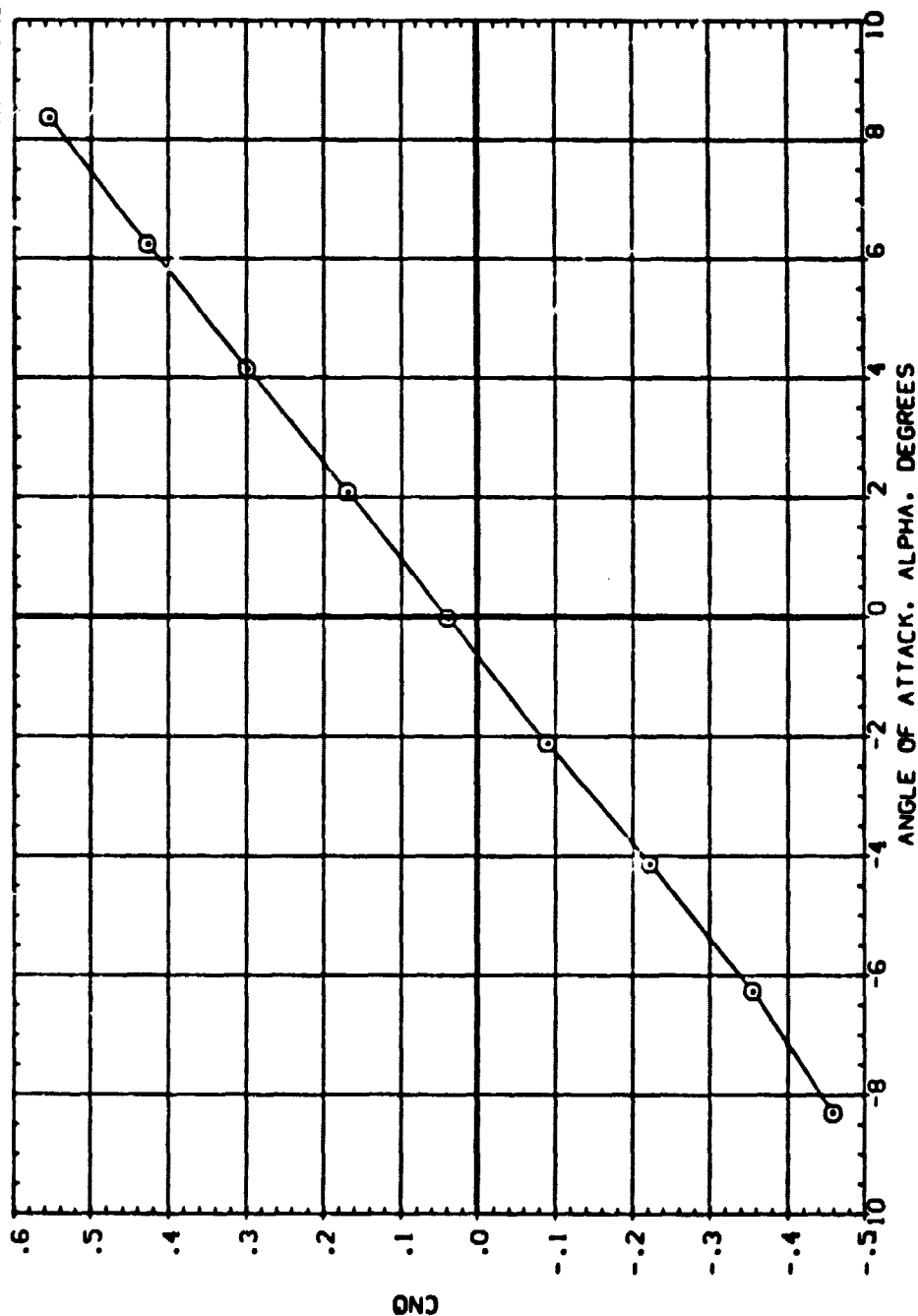


EFFECTS OF WING WAX

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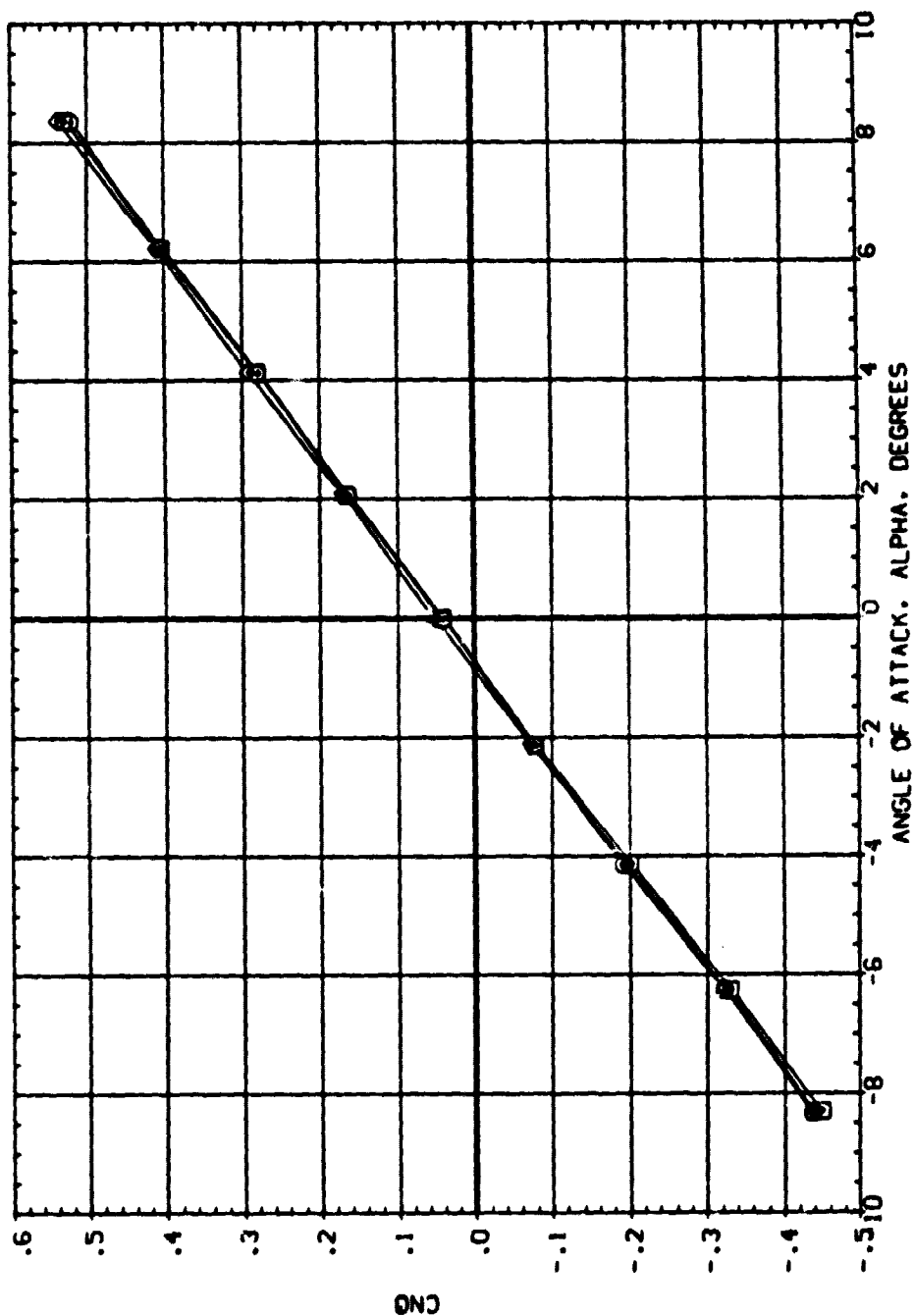


EFFECTS OF WING WAX

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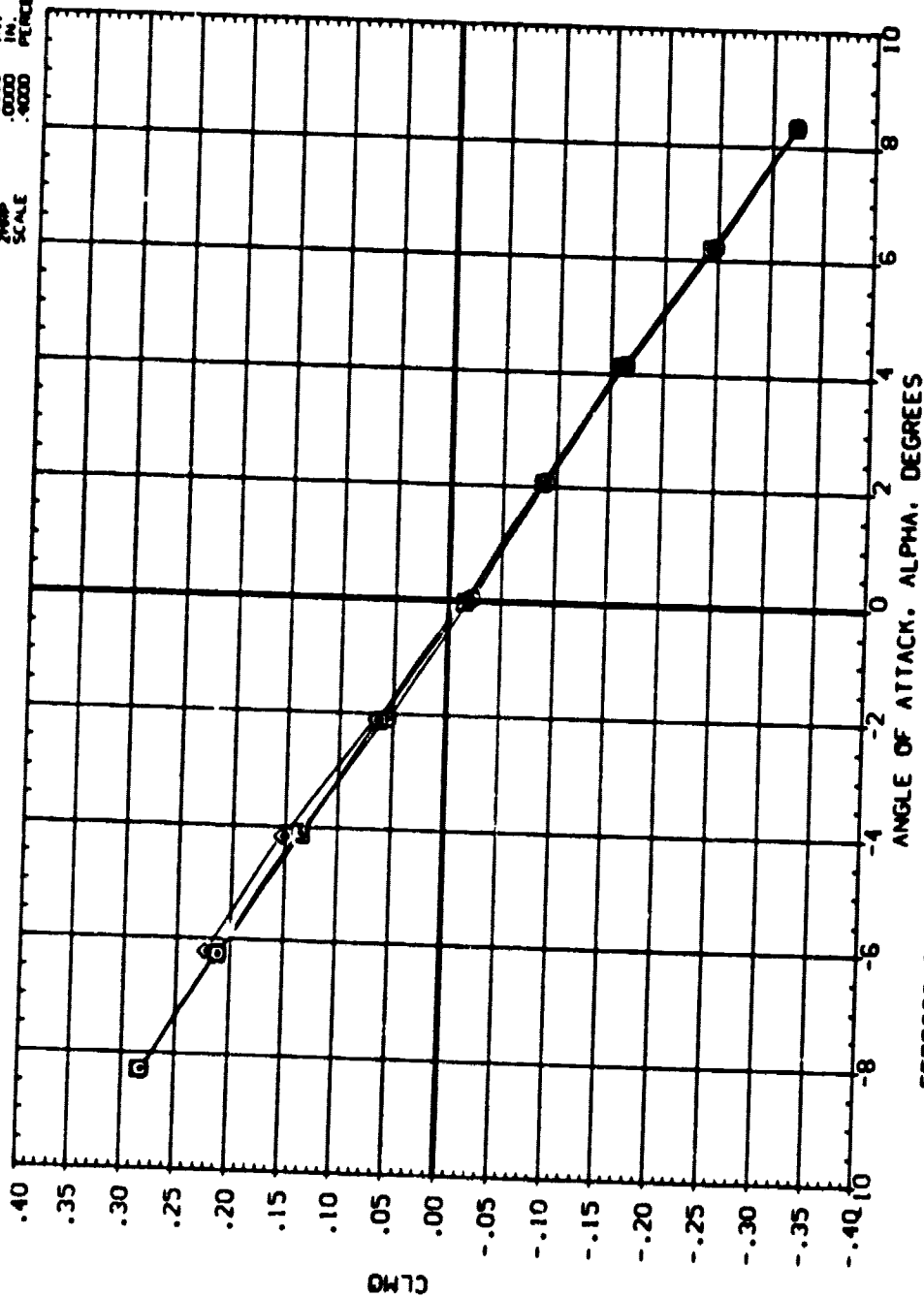


EFFECTS OF WING VAX

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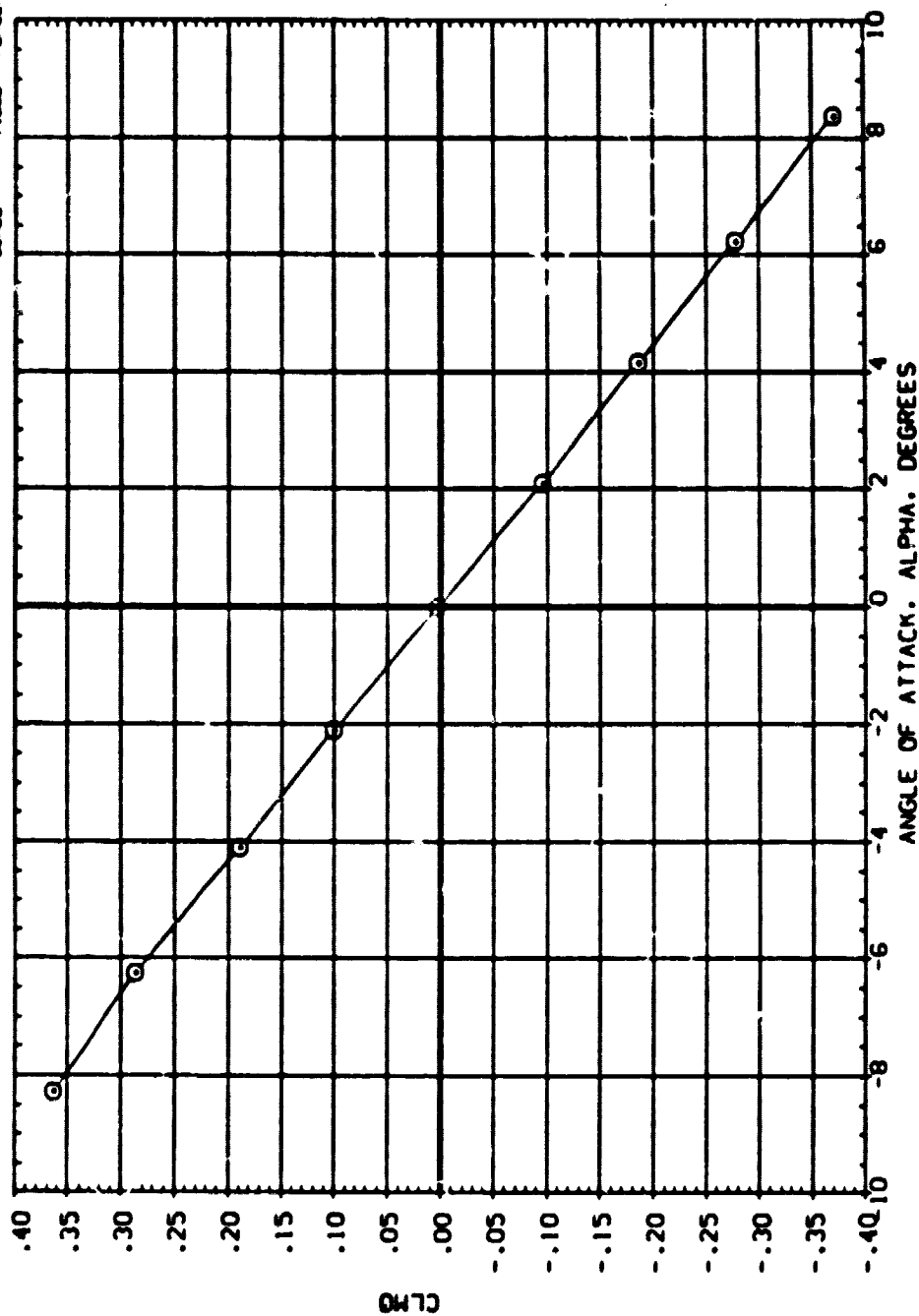


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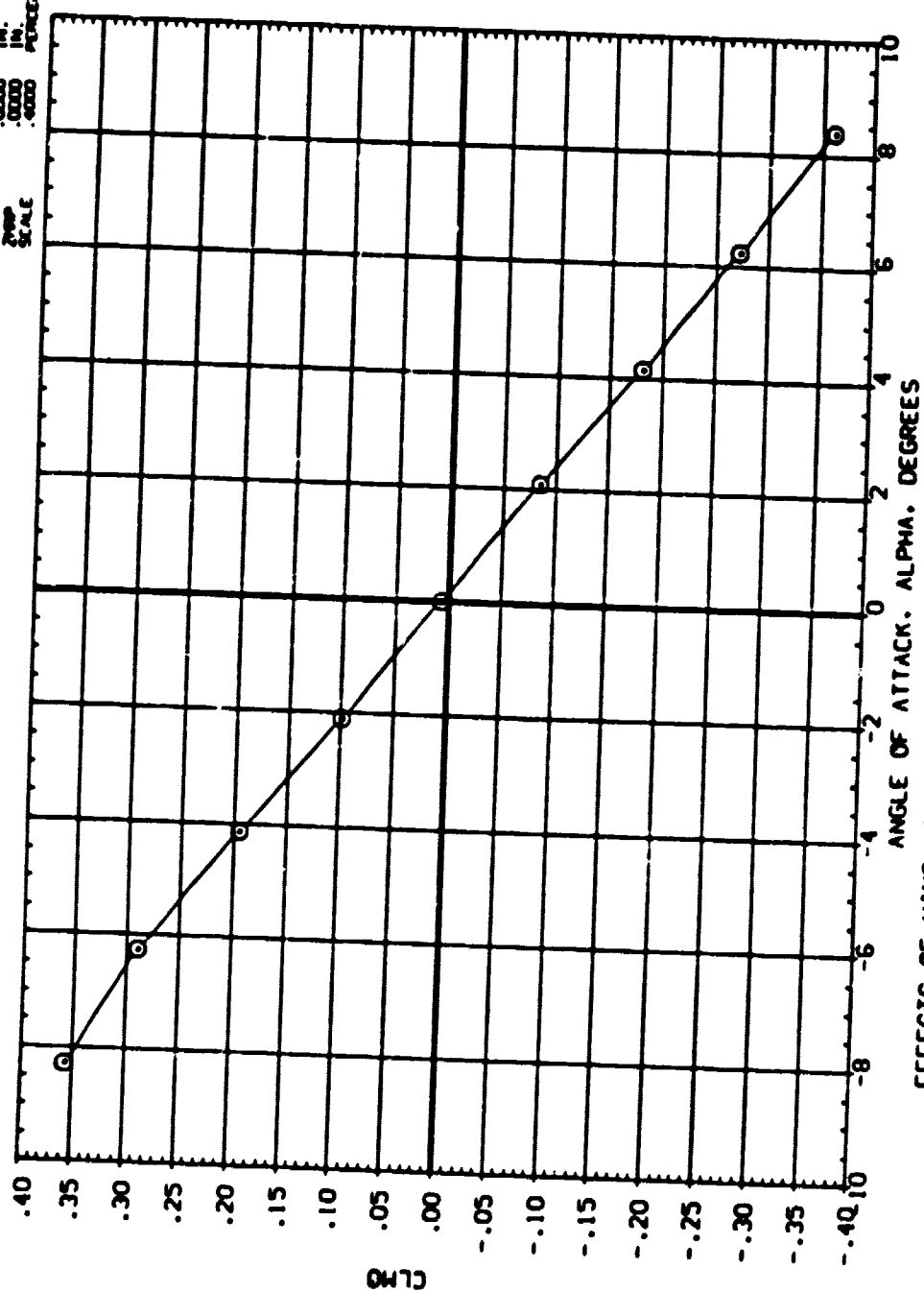


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11-11-11

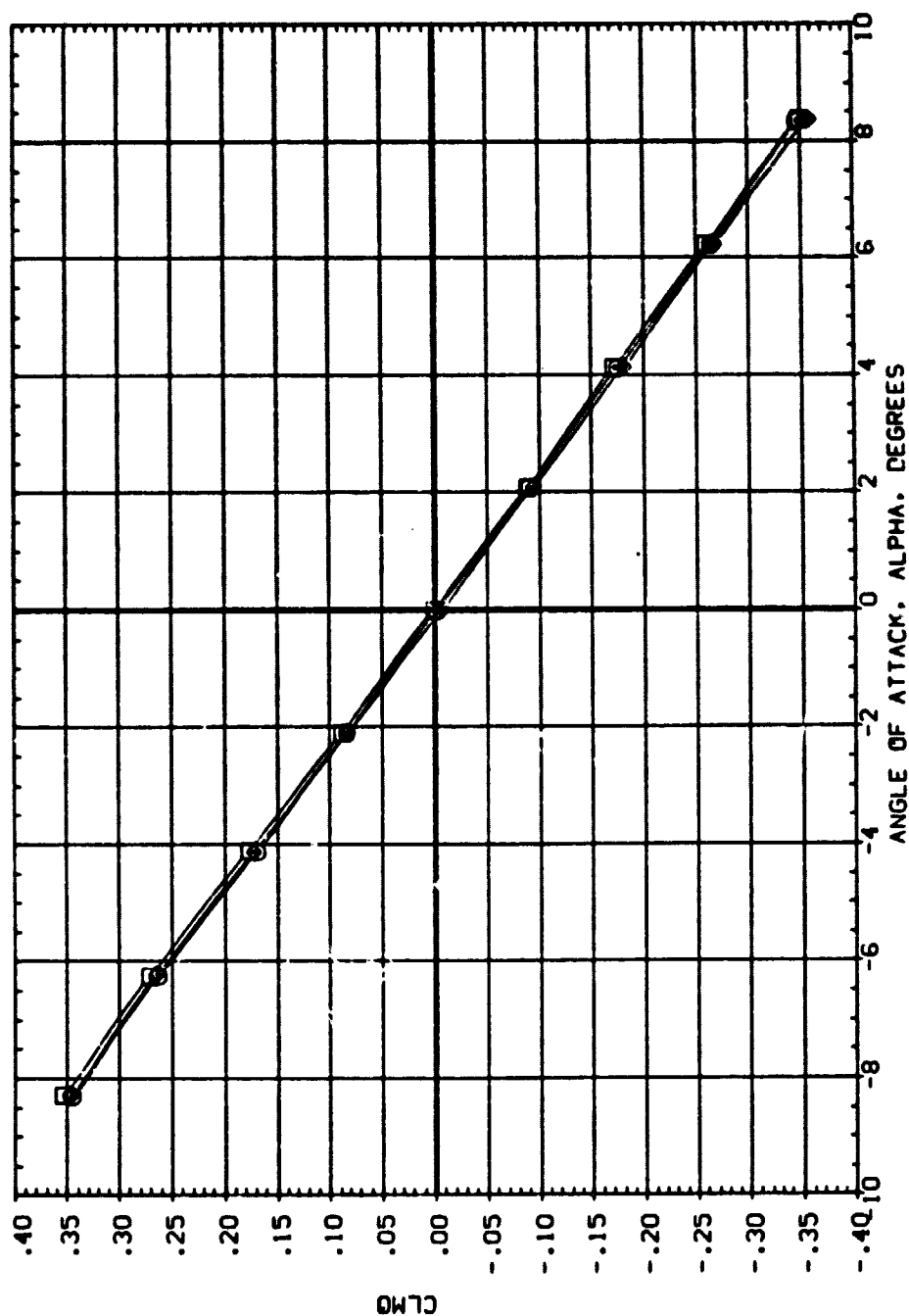
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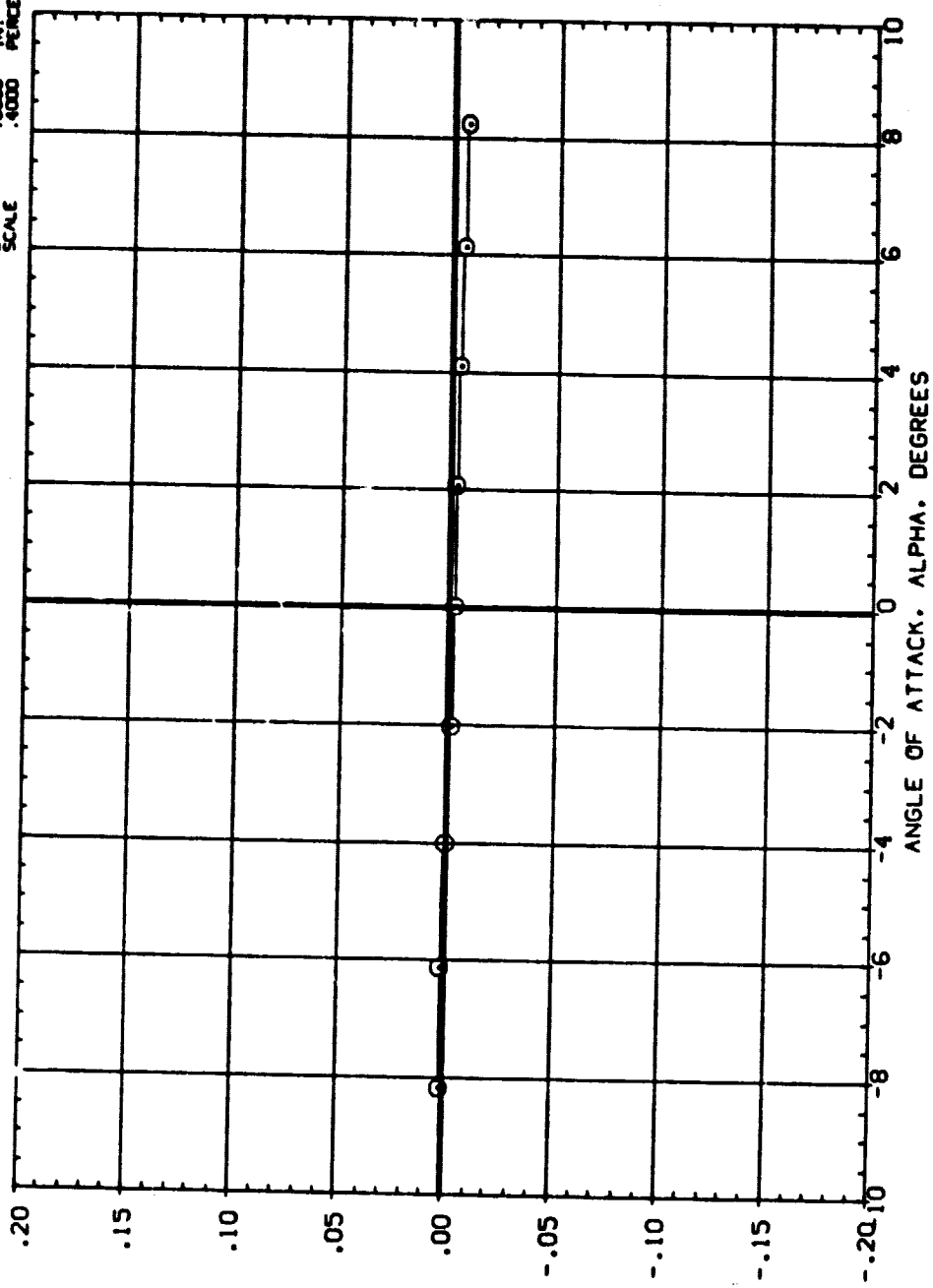
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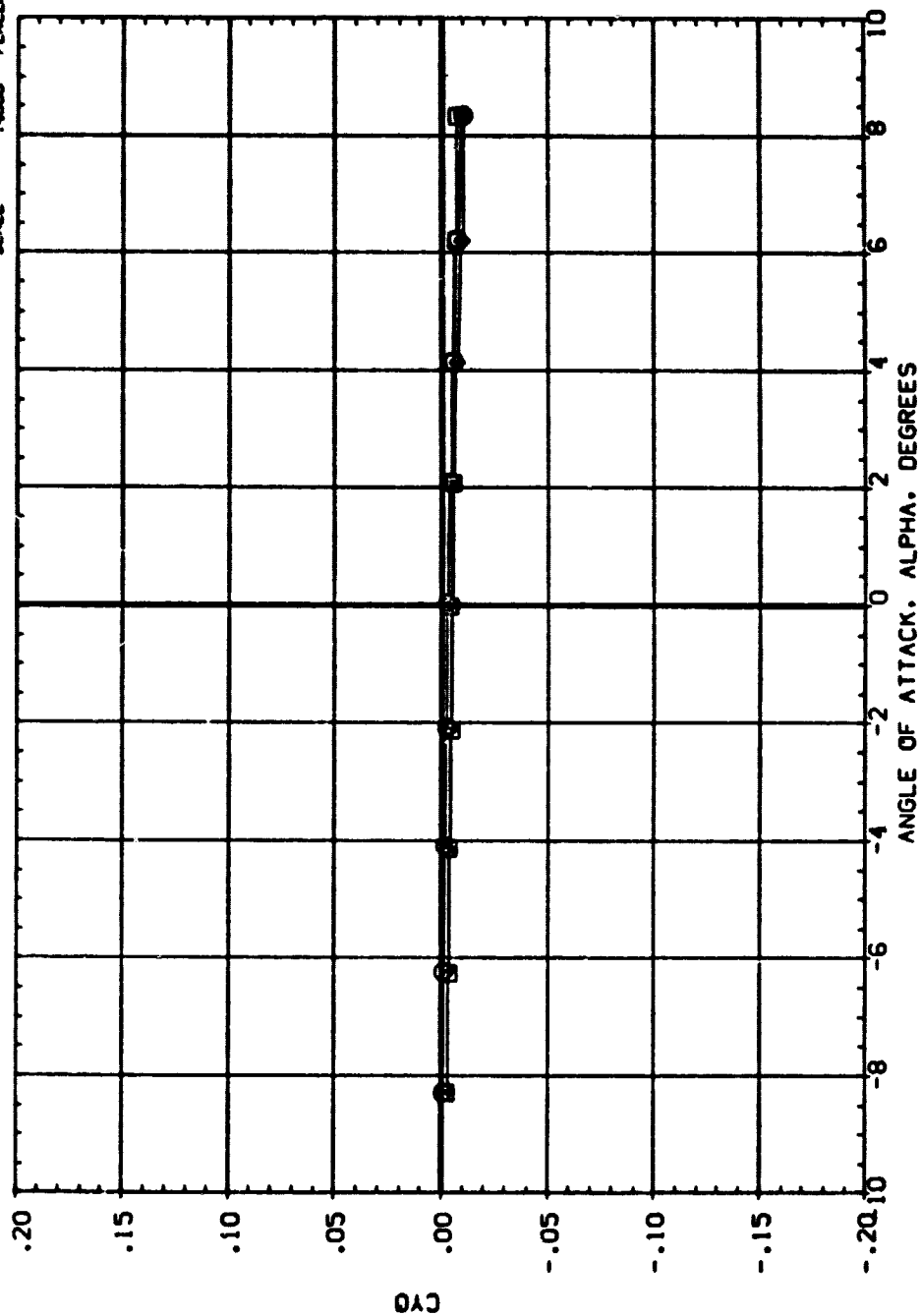


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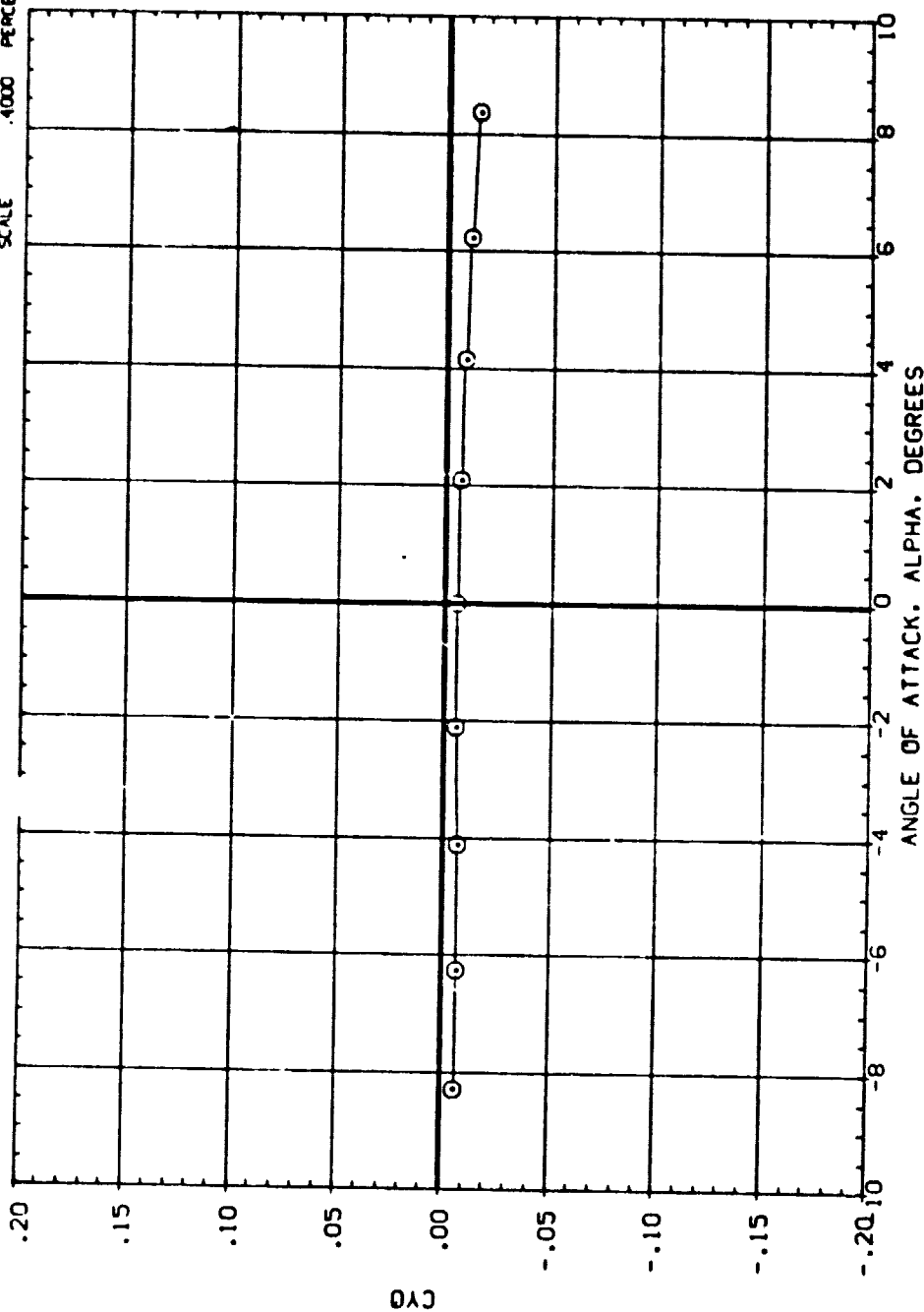


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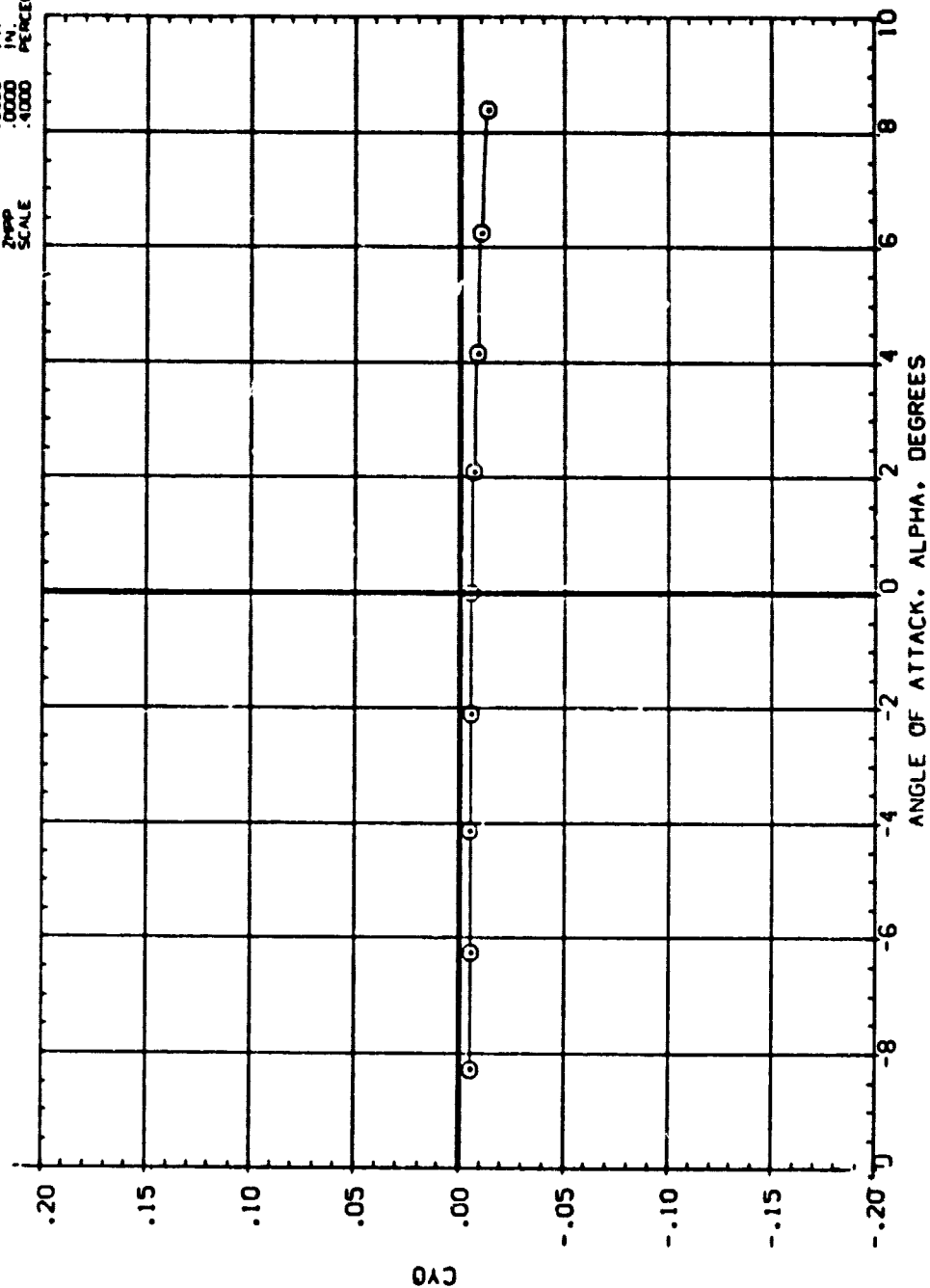


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EFFECTS OF WING WAX

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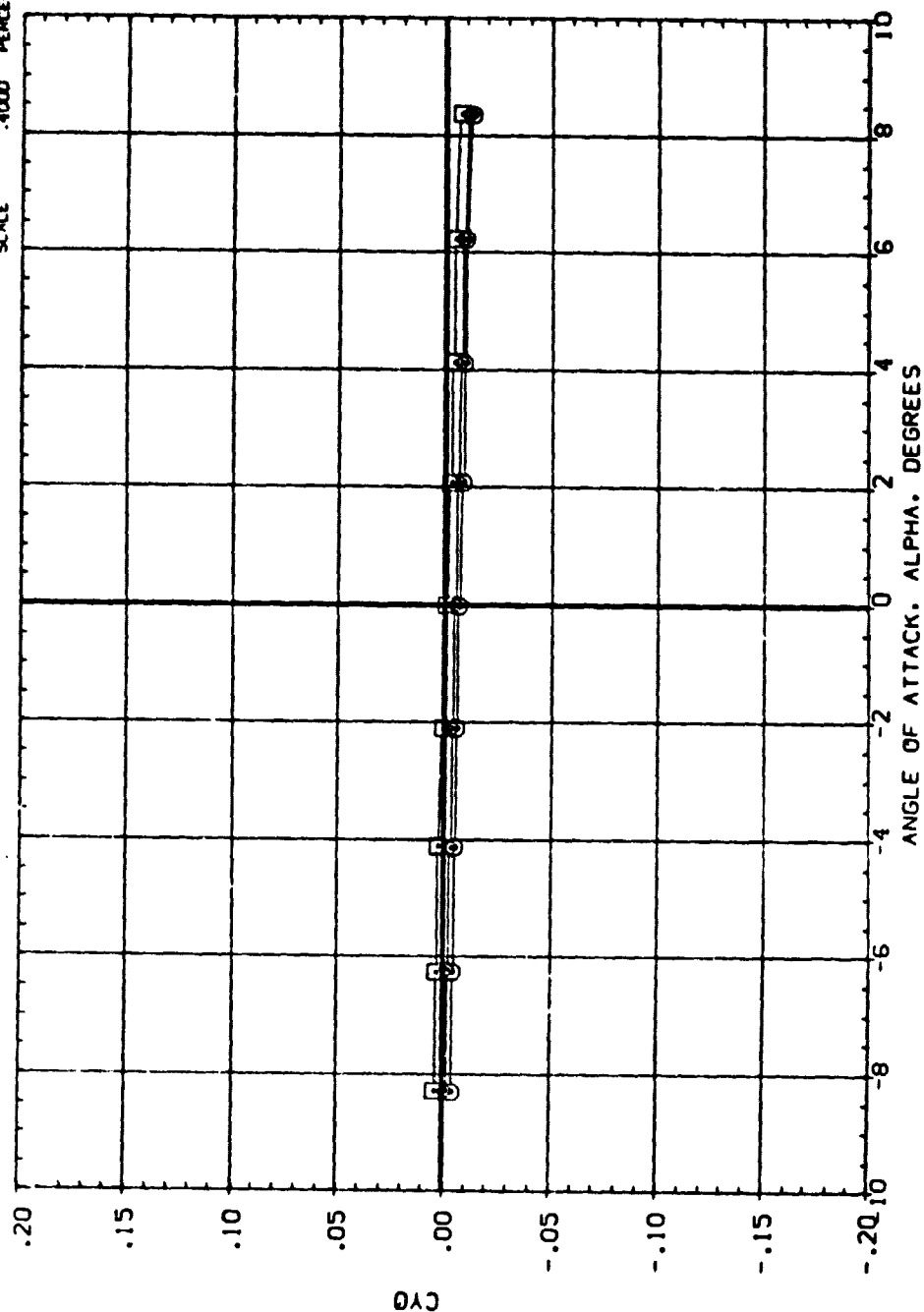
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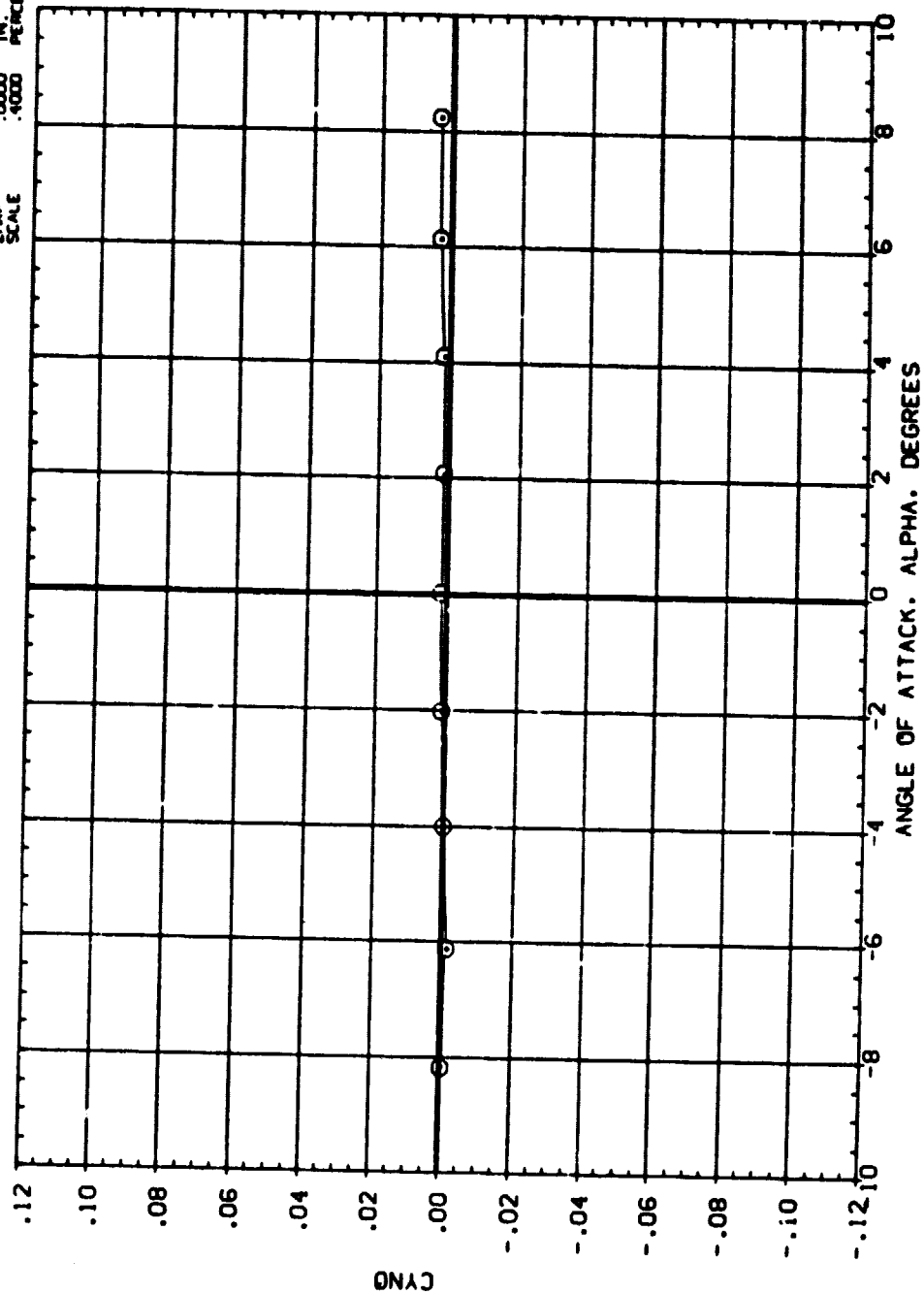


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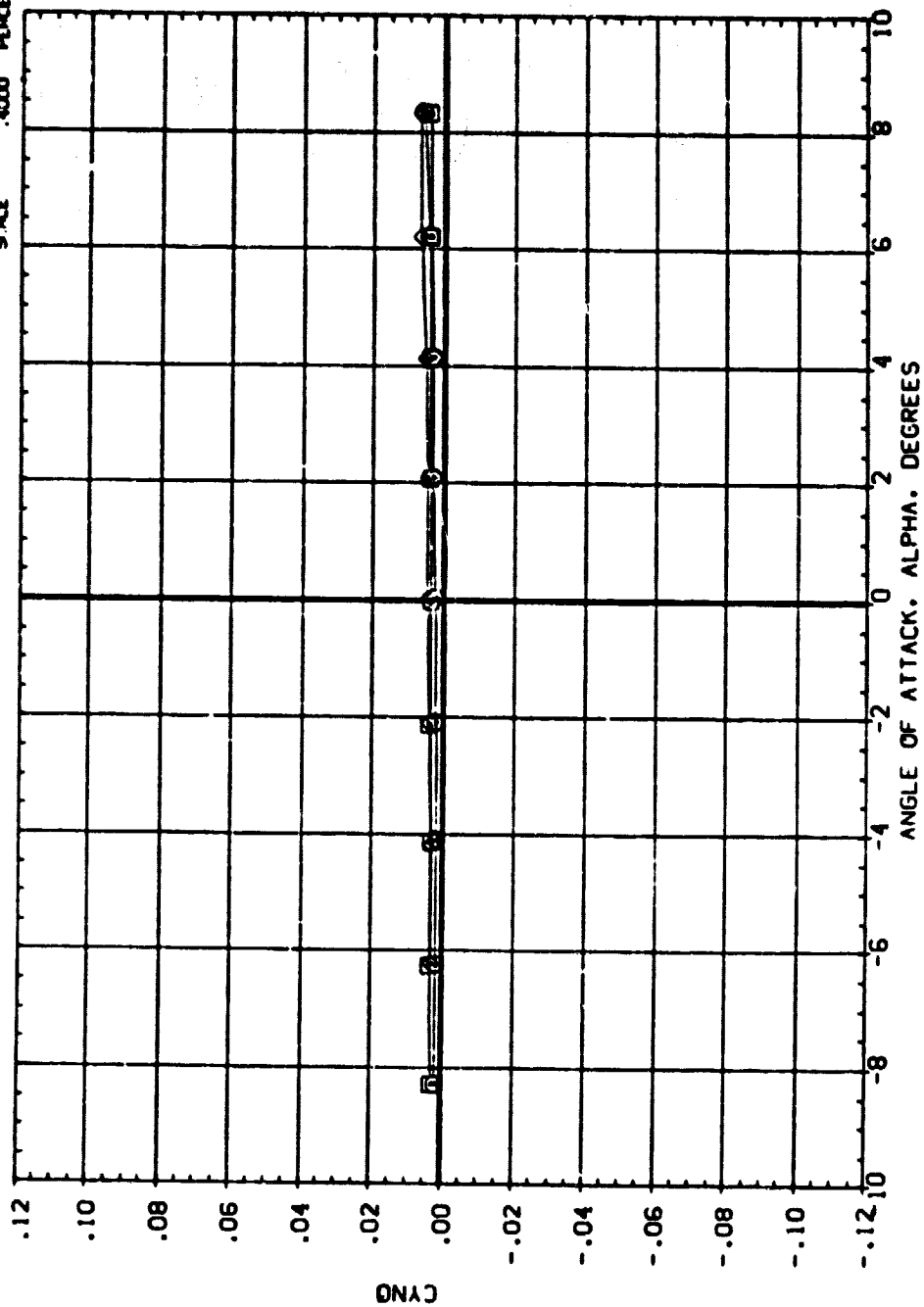
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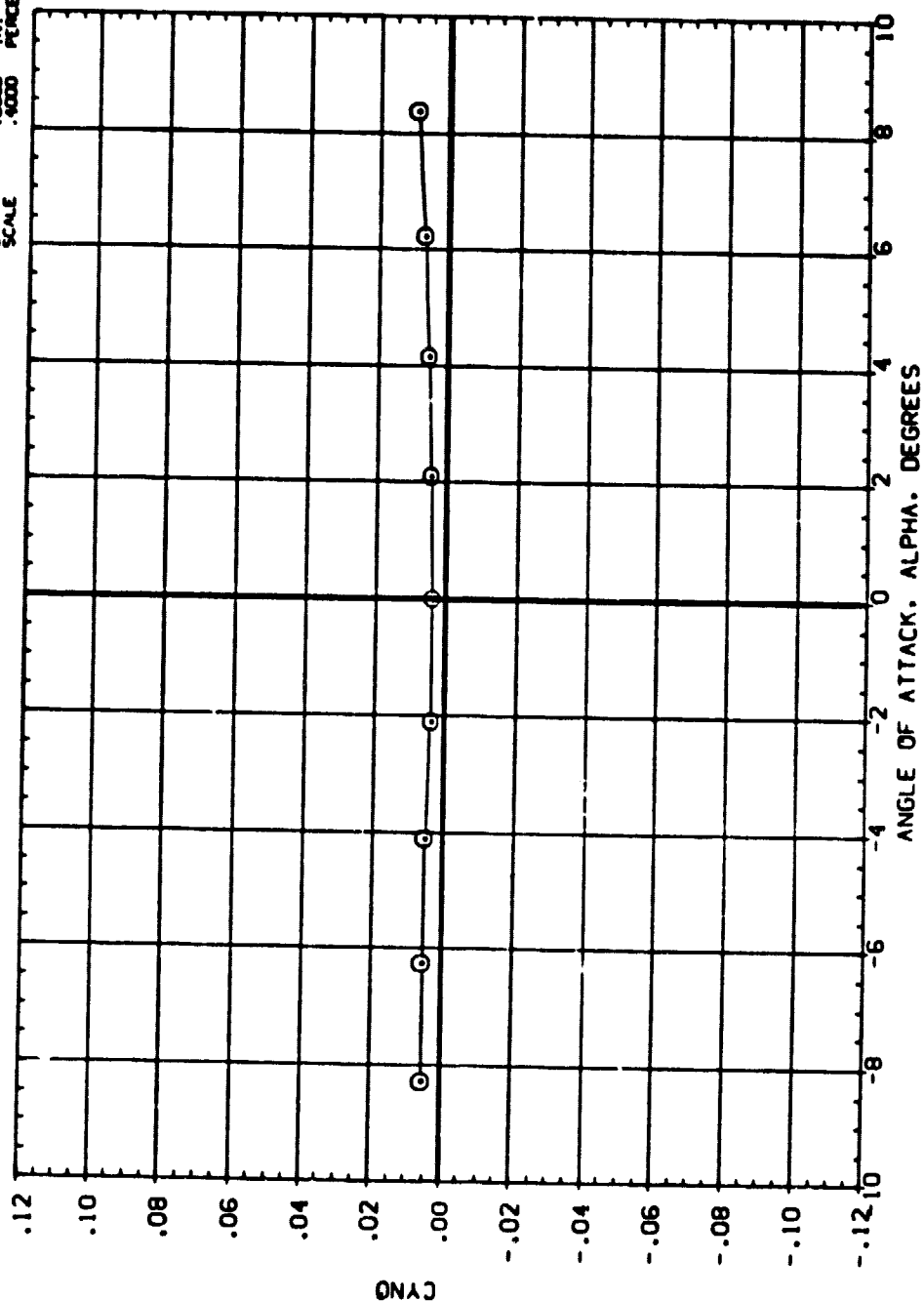


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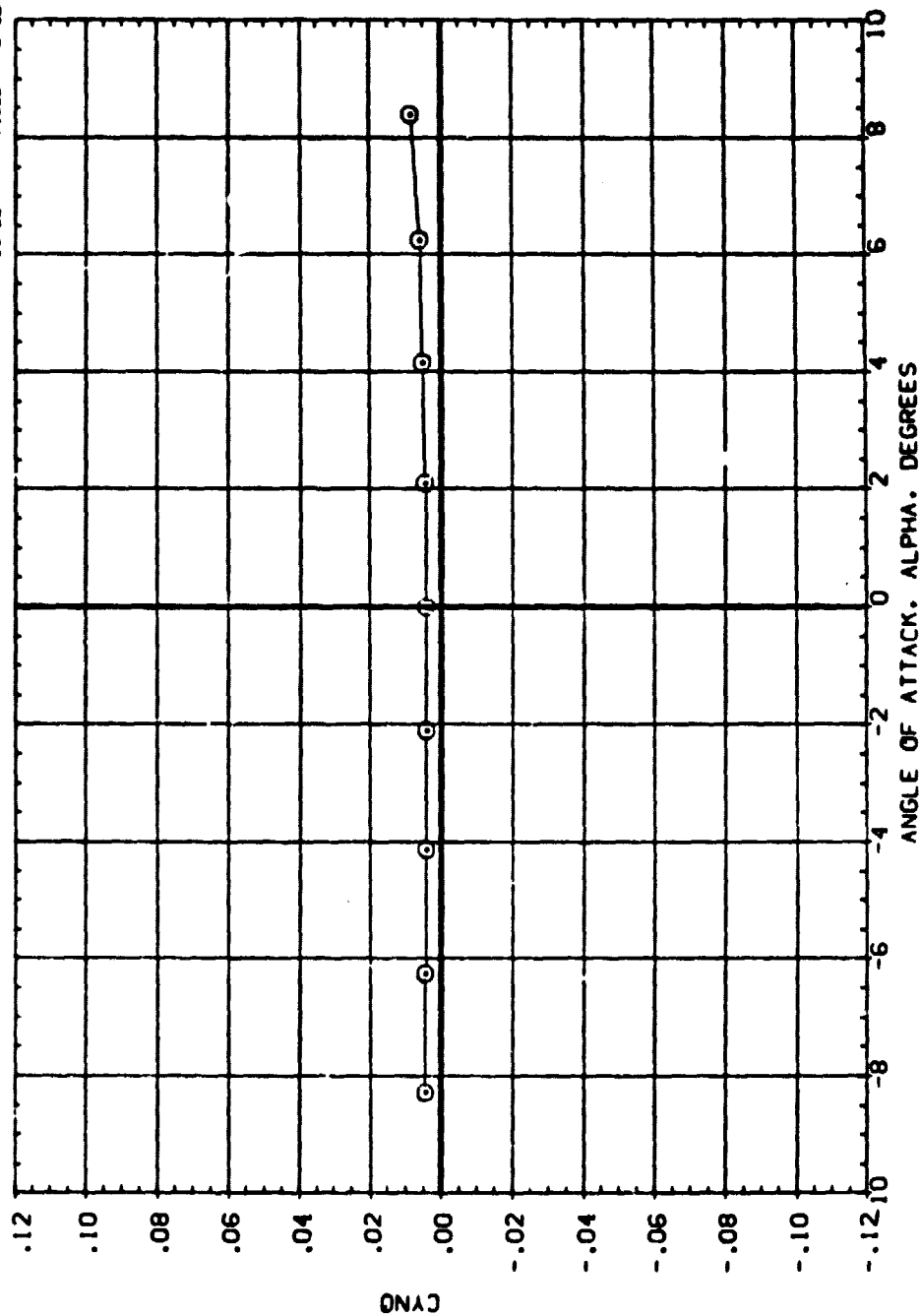


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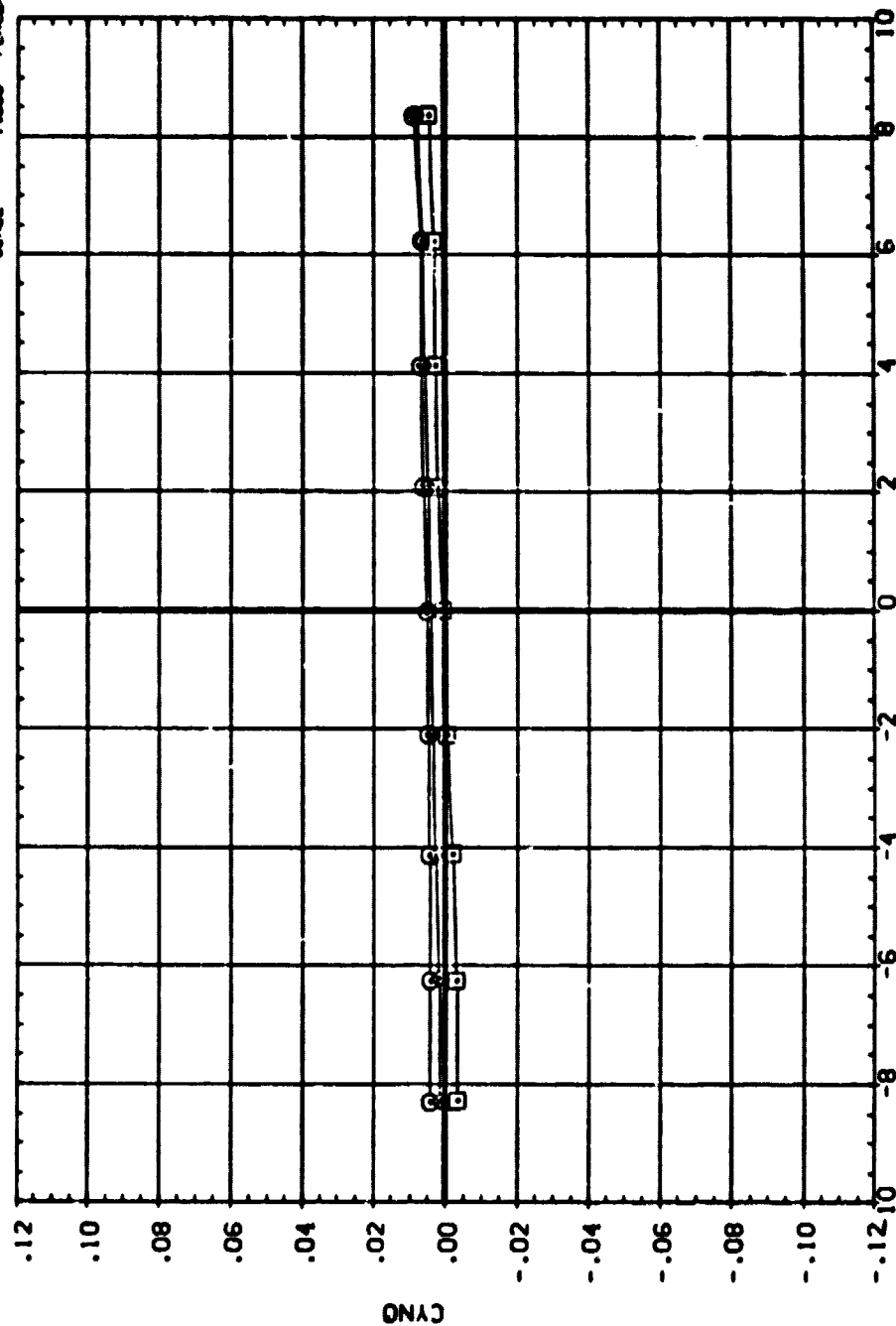


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DATA SET SYMBL. CONFIGURATION DESCRIPTION
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 (FA2802) FA28. MSC INT 656. COF IG. 02VJ22 WING GAP WAX
 (FA2804) FA28. MSC INT 656. COF IG. 02VJ22 WING WAX CUT

REFERENCE INFORMATION
 SET 6.1980 SQ. IN.
 LIFT 5.1612 IN.
 DRIFT 3.7470 IN.
 YAWP 2.7120 IN.
 ZWAP .0000 IN.
 SCALE .0000 PERIOD

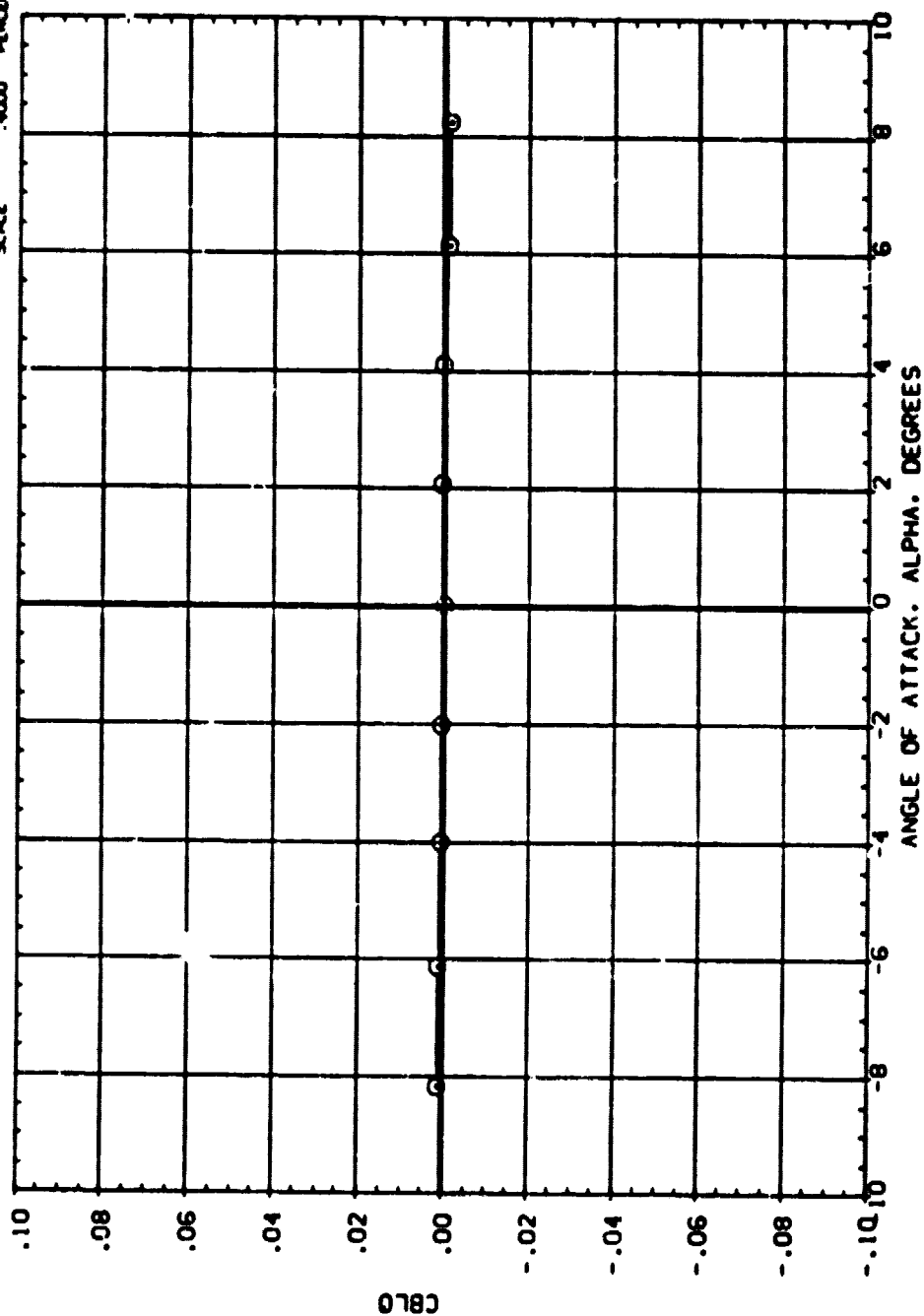


EFFECTS OF WING WAX

(E)MACH = 1.25

DATA SET SYMBOL: FA2011
 CONFIGURATION DESCRIPTION: FA20- WFFC TWT 65% CONF16. 02N2E2
 (FA2021) DATA NOT AVAILABLE
 (FA2022) DATA NOT AVAILABLE
 (FA2023) DATA NOT AVAILABLE

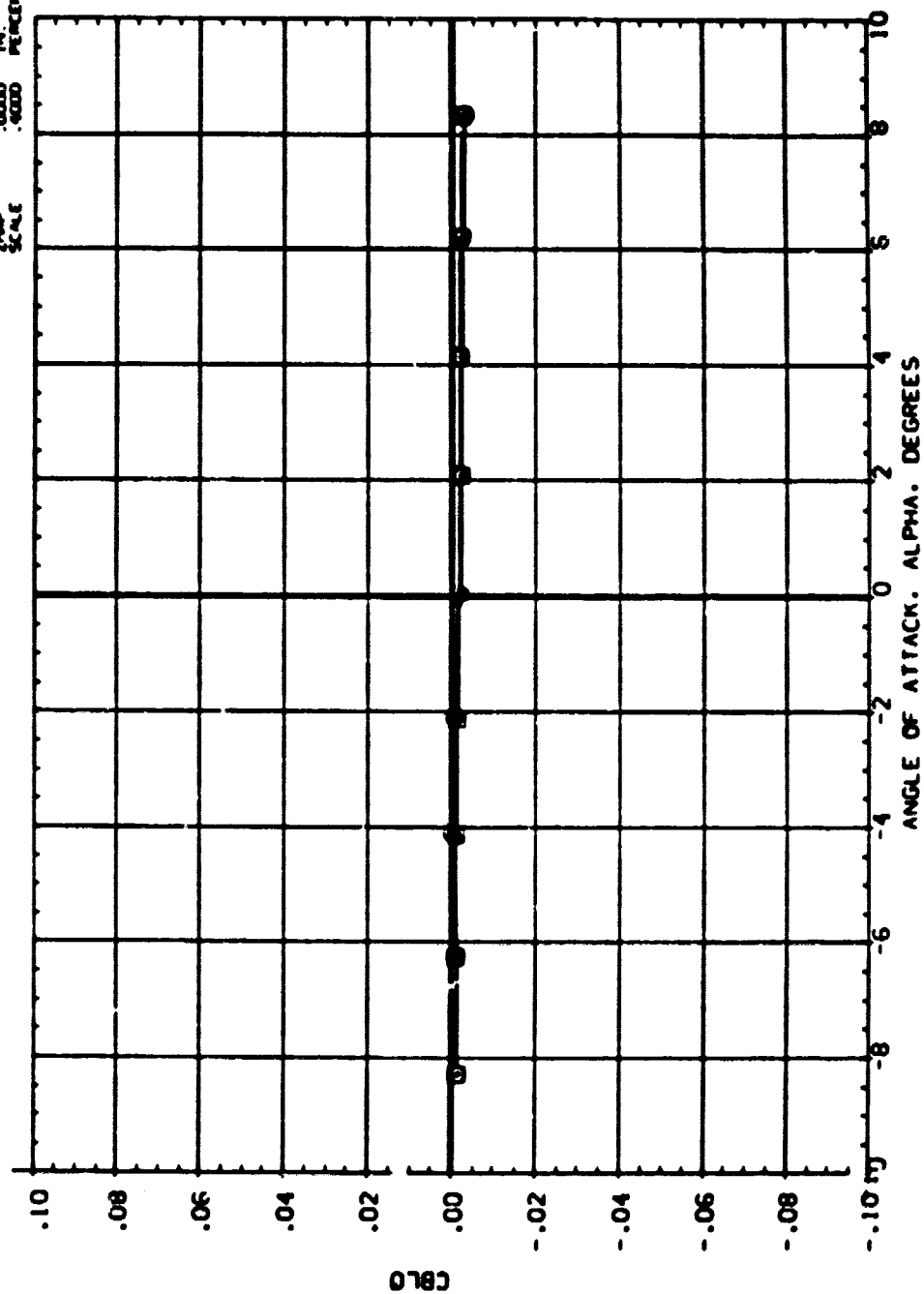
REFERENCE INFORMATION
 SPOT: 6.1580 IN.
 LIFT: 5.1612 IN.
 DRIFT: 3.2470 IN.
 YAW: 2.7120 IN.
 TYP: .0000 IN.
 SCALE: .0000 PERIOD



EFFECTS OF WING WAX
 (A)MACH = .60

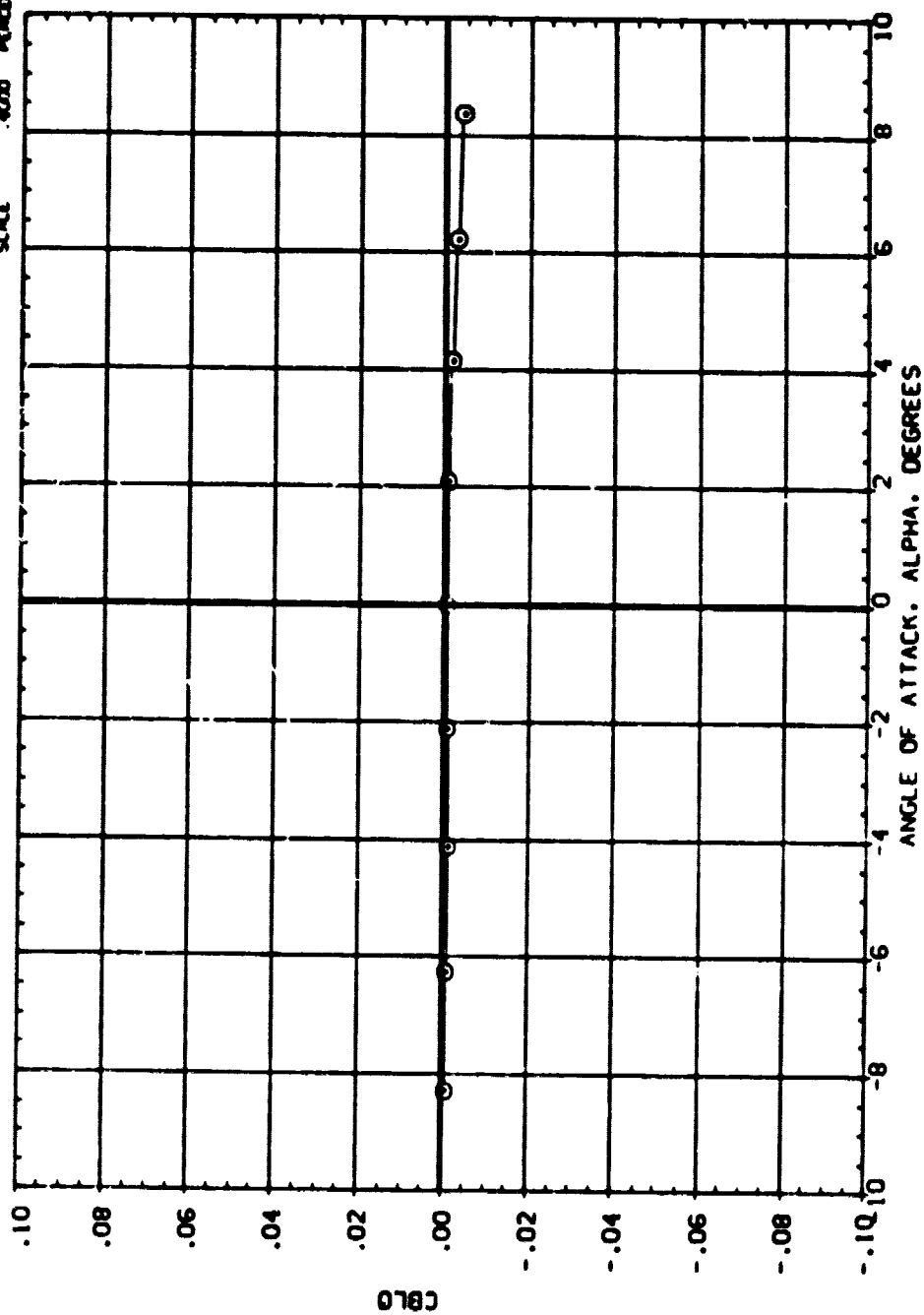
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (PAPER1) 8 FA28. MPC TWT 656. CONF 16. CR2E2 WING GAP WAX
 (PAPER2) 8 FA28. MPC TWT 656. CONF 16. CR2E2 WING GAP WAX
 (PAPER3) 8 FA28. MPC TWT 656. CONF 16. CR2E2 WING GAP WAX

REFERENCE INFORMATION
 SET 8.1380 50. IN
 LIFT 5.1612 IN.
 DRAG 3.2470 IN.
 MOM 2.7120 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .4000 PERCENT



EFFECTS OF WING WAX

(B)MACH = .90

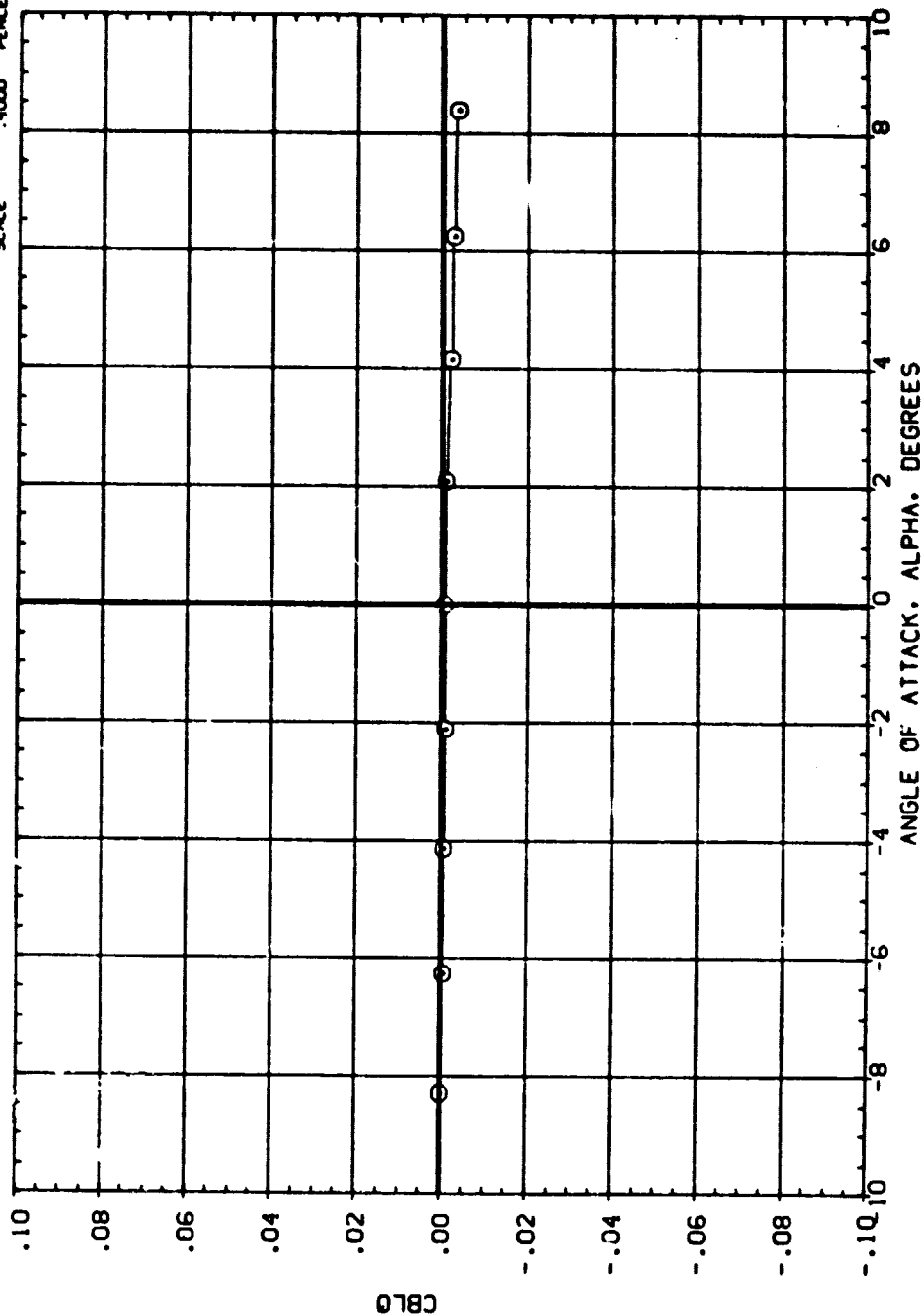
[illegible]

EFFECTS OF WING WAX

(C)MACH = 1.06

DATA SET SYMBOL: FA2801 } CONFIGURATION DESCRIPTION
 (FA2801) } FA280 MSFC TWT 656- CONF 16. 02V2E2
 (FA2802) } DATA NOT AVAILABLE
 (FA2804) } DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 XREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

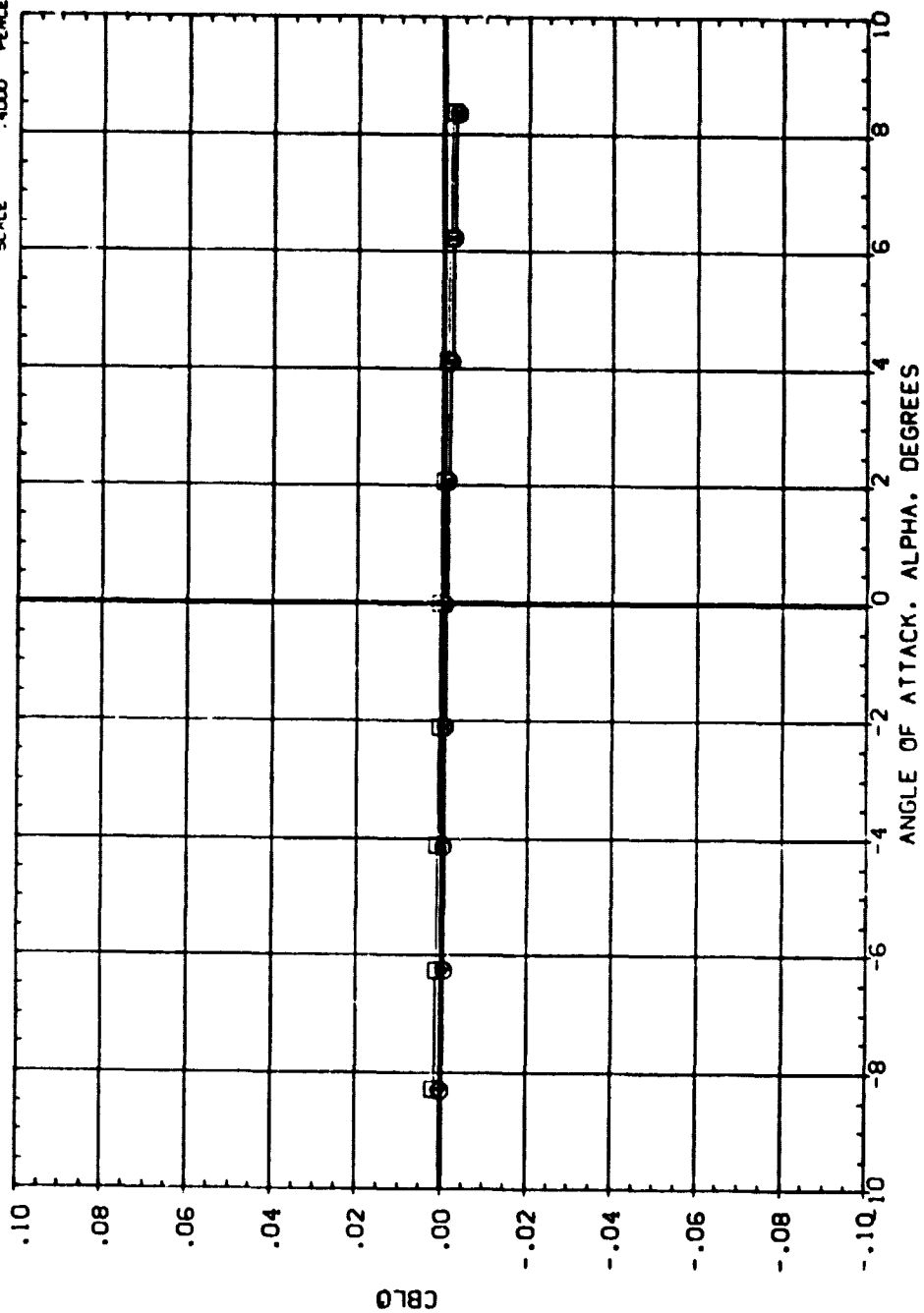


EFFECTS OF WING WAX

(D)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION 07-422
 (FA2801) FA28. MSFC TVT 656. CONF IG. 07-422 VING GAP VAX
 (FA2802) FA28. MSFC TVT 656. CONF IG. 07-422 VING VAX CUT
 (FA2804) FA28. MSFC TVT 656. CONF IG. 07-422 VING VAX CUT

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

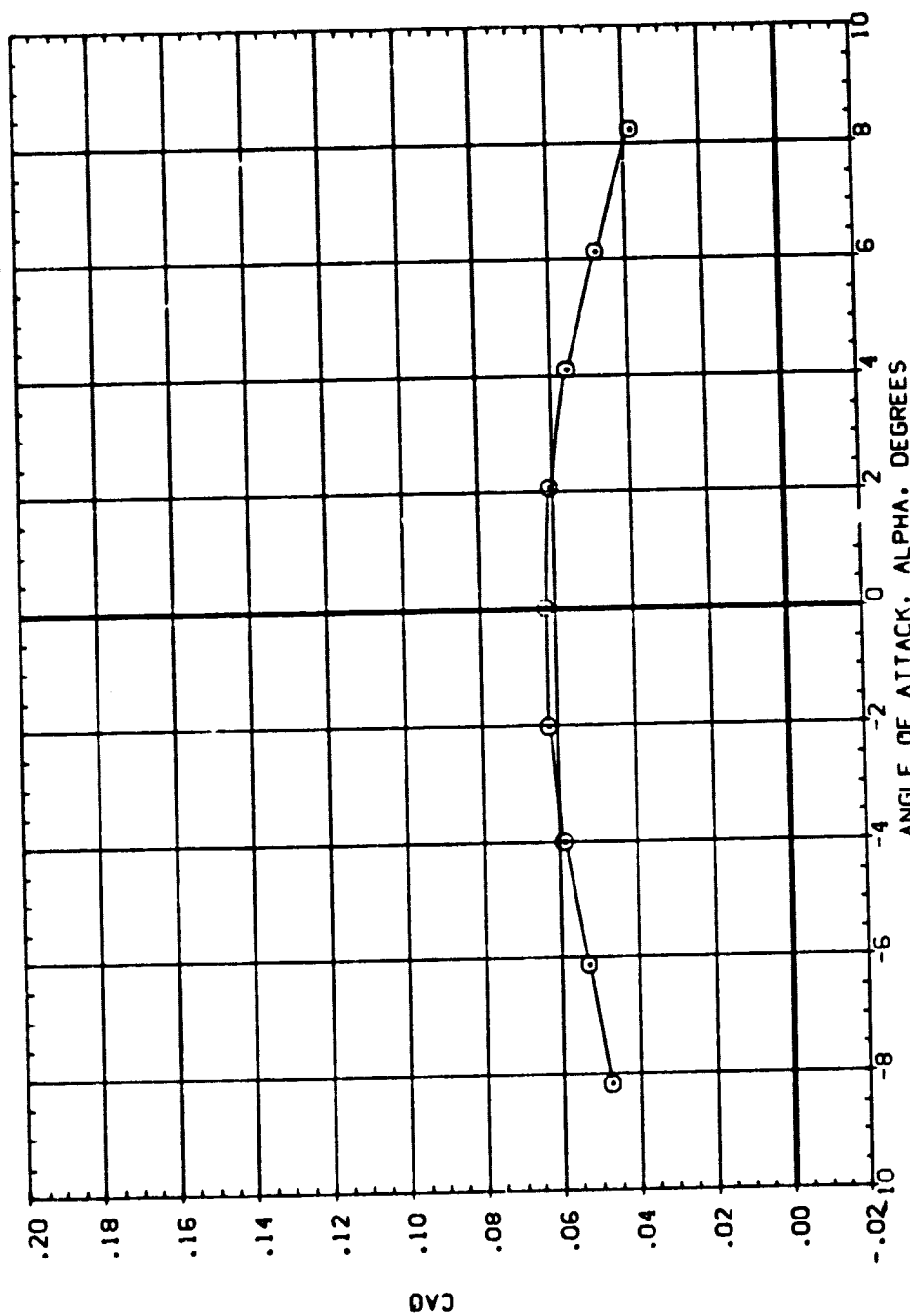


EFFECTS OF WING WAX

(E)MACH = 1.25

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2801) FA28. HSFC TVT 656. CONFIG. 03V2E2
 (FA2802) DATA NOT AVAILABLE
 (FA2804) DATA NOT AVAILABLE



EFFECTS OF WING WAX

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FA2801) 0 FA28, MSFC TWT 656, CONF 1G, 02NZE2 WING GAP MAX

(FA2802) 0 FA28, MSFC TWT 656, CONF 1G, 02NZE2 WING VAX CUT

(FA2804) 0 FA28, MSFC TWT 656, CONF 1G, 02NZE2 WING VAX CUT

REFERENCE INFORMATION

SREF 6.1980 50. IN

LREF 5.1612 IN.

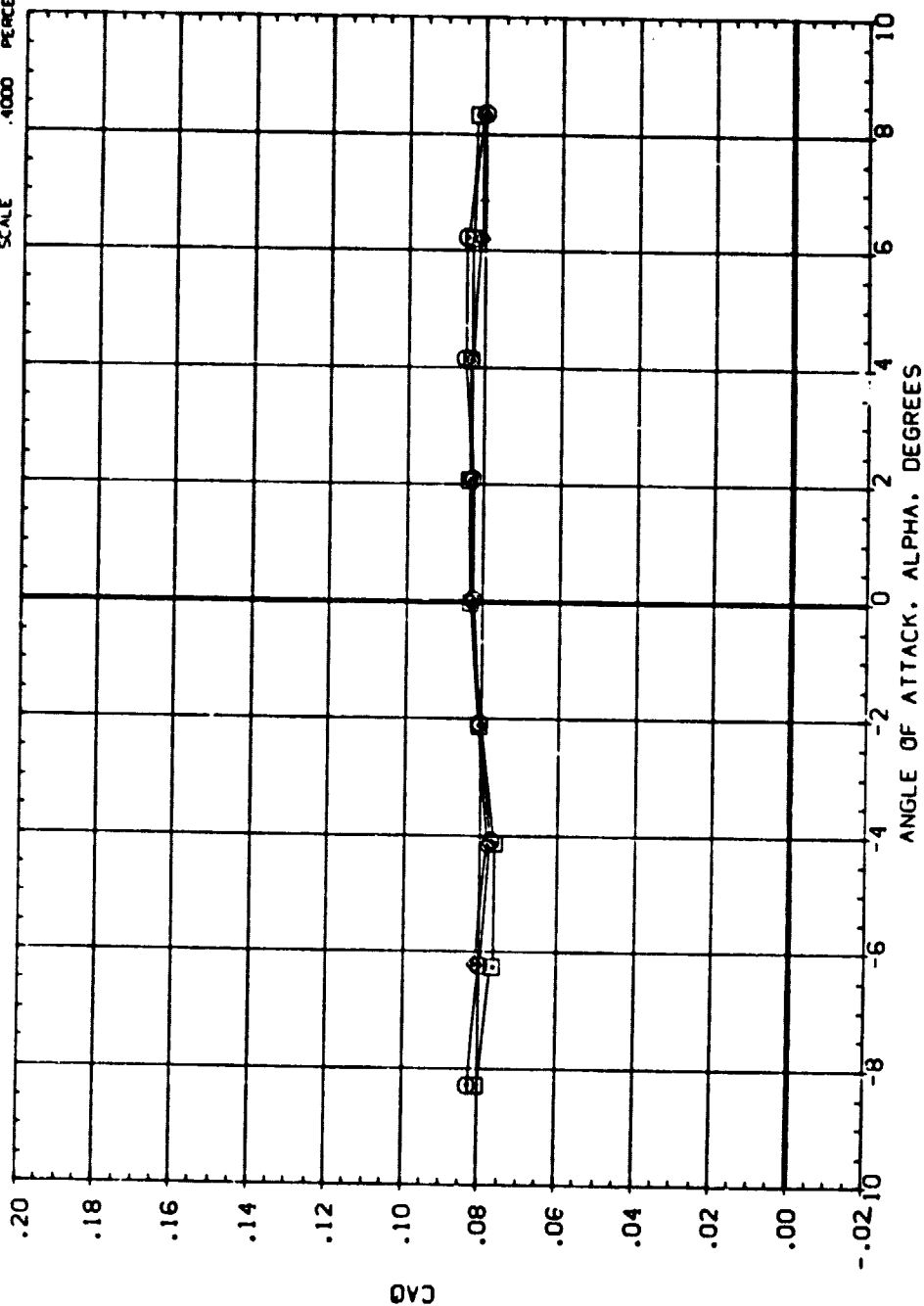
BREF 3.7470 IN.

XMAP 2.7120 IN.

YMAP .0000 IN.

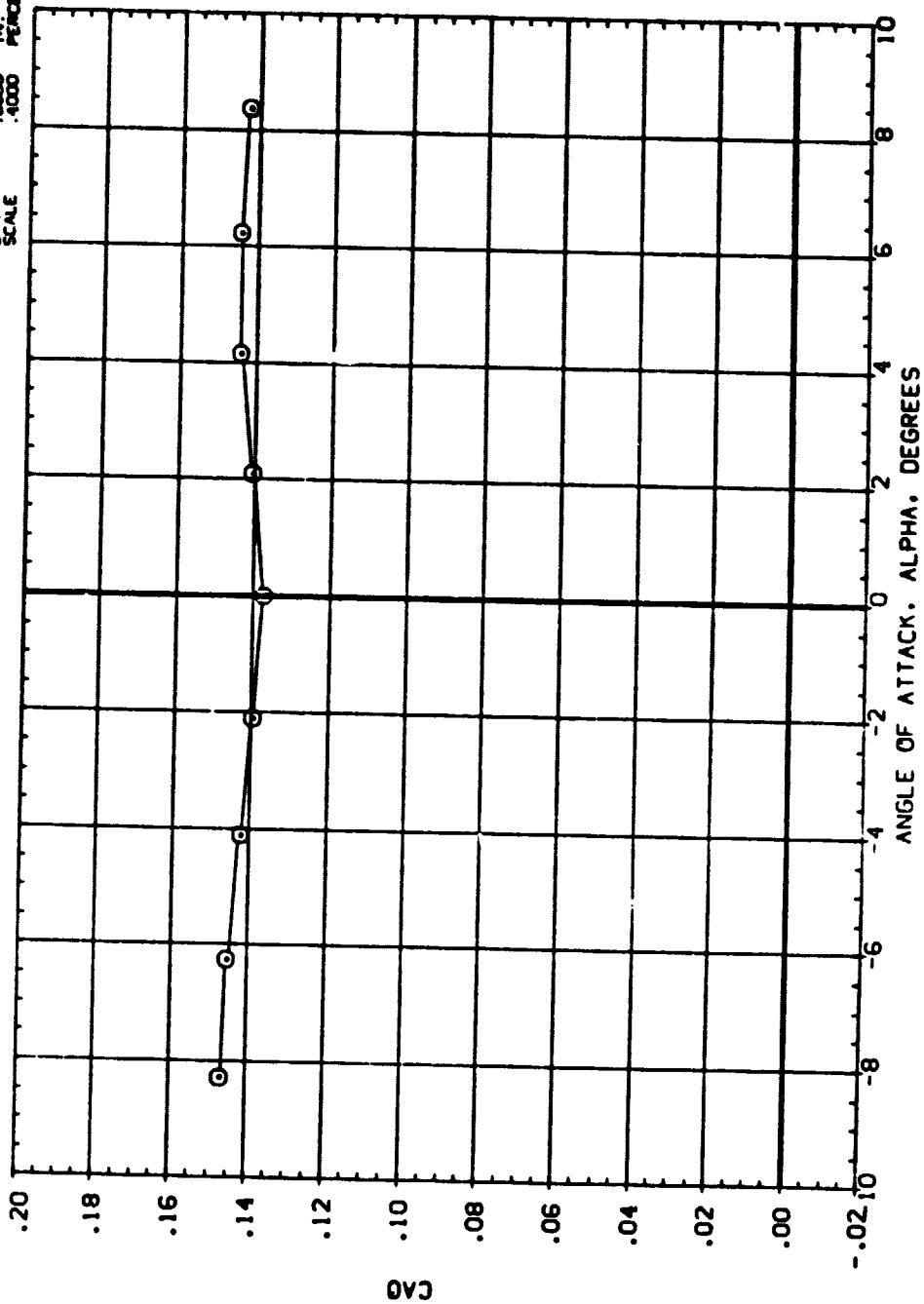
ZMAP .0000 IN.

SCALE .4000 PERCENT



DATA SET SYMBOL: \square CONFIGURATION DESCRIPTION:
 (FA2801) FA28. MSC TWT 656. CONFIG. 02V2E2
 (FA2802) DATA NOT AVAILABLE
 (FA2804) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1997 50. IN.
 LREF 5.1512 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT

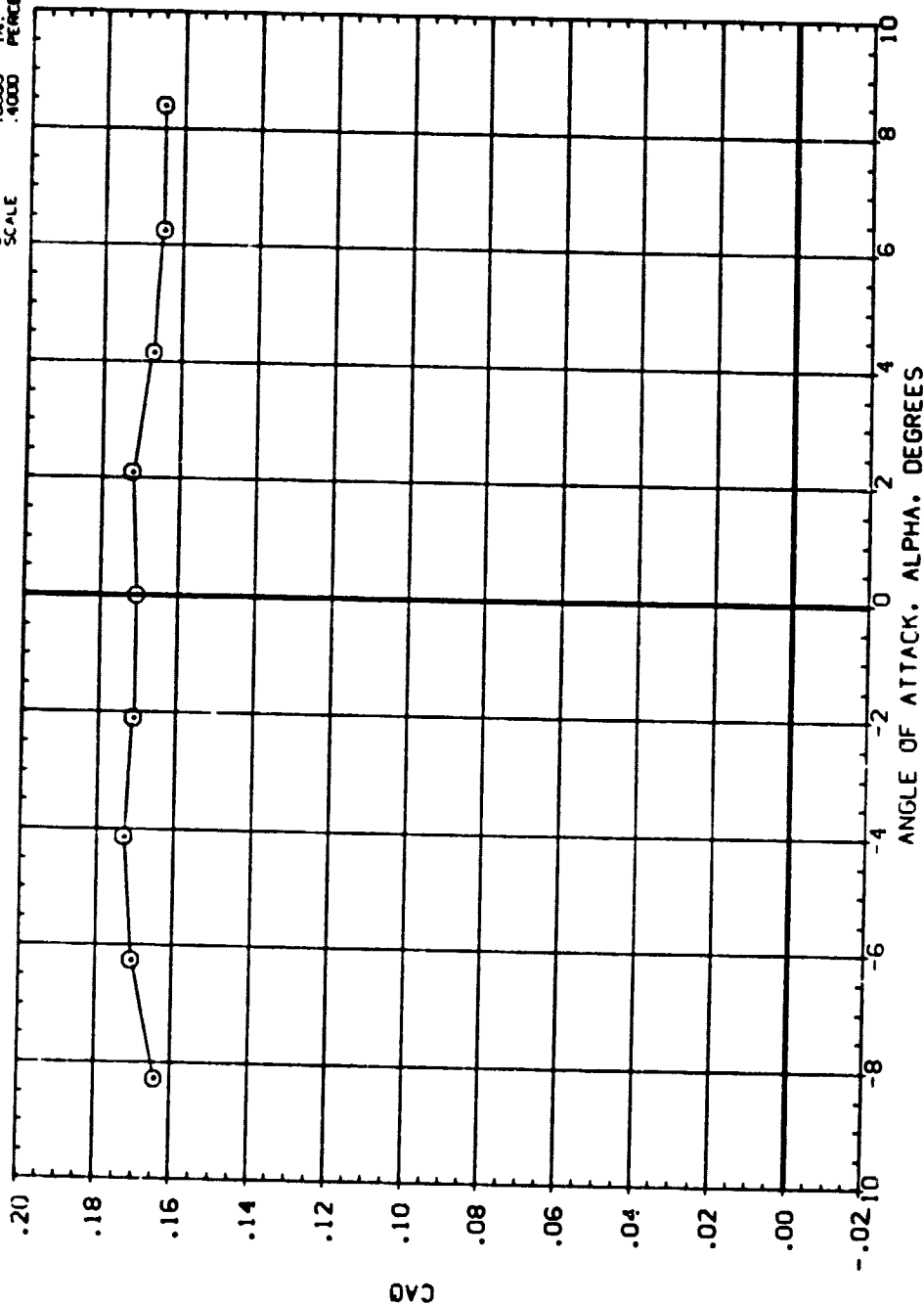


EFFECTS OF WING WAX

(C)MACH = 1.06

DATA SET SYMBOL: (FA2801)
 CONFIGURATION DESCRIPTION: FA28. MSFC TWT 656. CONFIG. 02N2E2
 (FA2802) DATA NOT AVAILABLE
 (FA2804) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 XREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

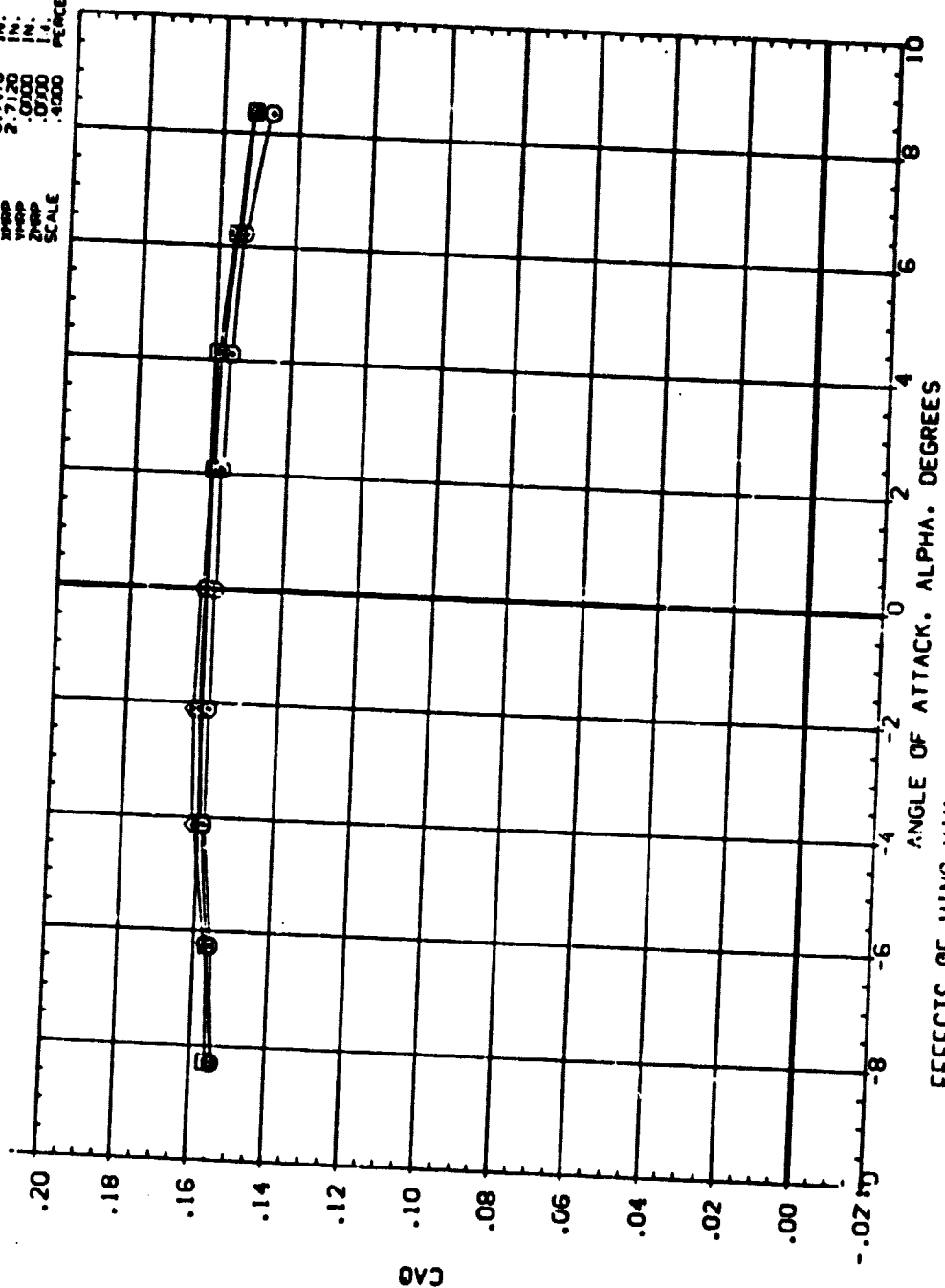


EFFECTS OF WING WAX

(0.1)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2001)  FA20. MSFC TUT 656. CONF 1G. GVZEE2
 (FA2002)  FA20. MSFC TUT 656. CONF 1G. GVZEE2 VING GAP WAX
 (FA2004)  FA20. MSFC TUT 656. CONF 1G. GVZEE2 VING WAX CUT

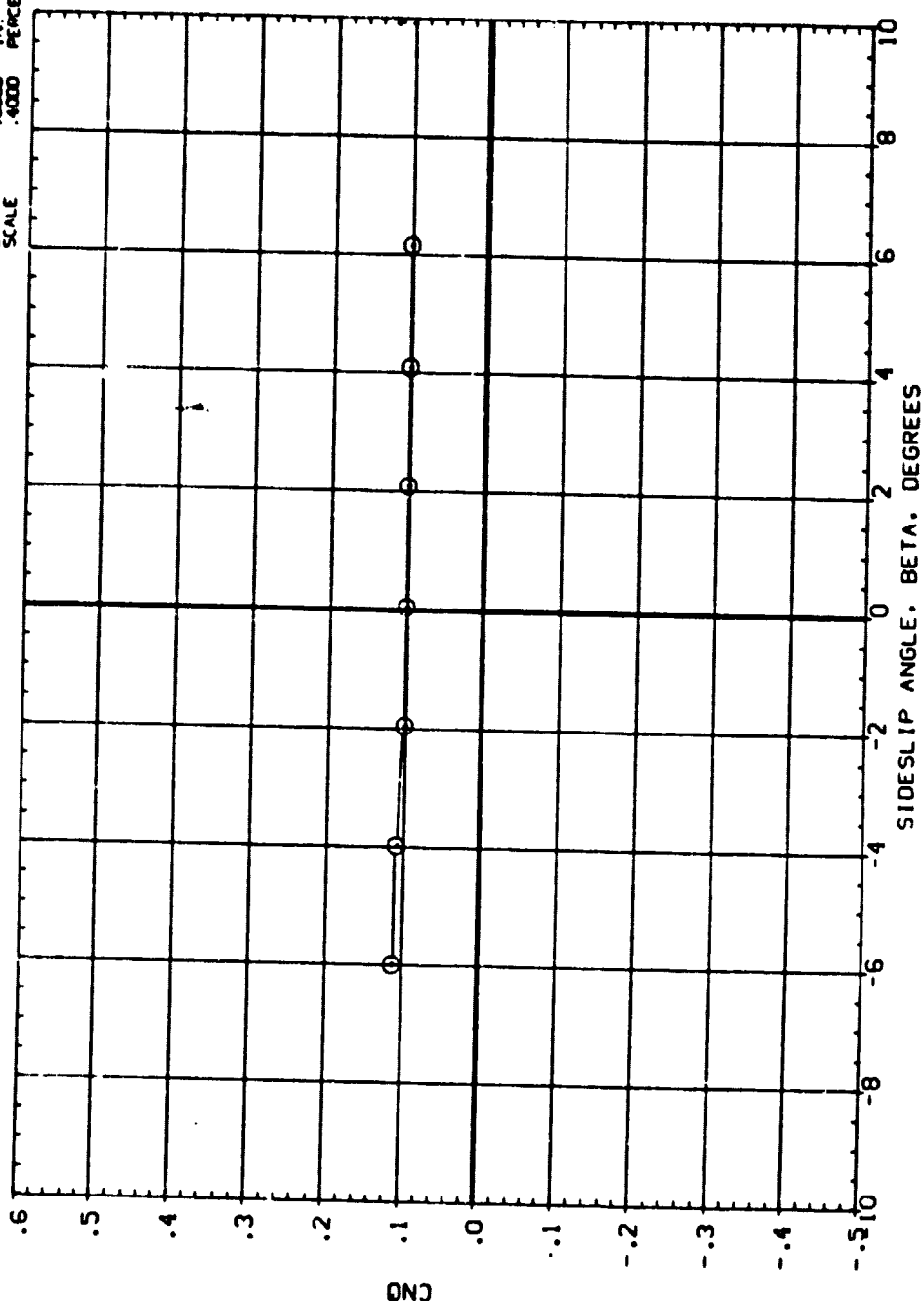
REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1512 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0300 IN.
 ZREF .0300 IN.
 SCALE 1.4 PERCENT



(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2803) ○ FA28. MSFC TWT 656. CONFIG. 02V2E2 WING GAP VAR

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 ZREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

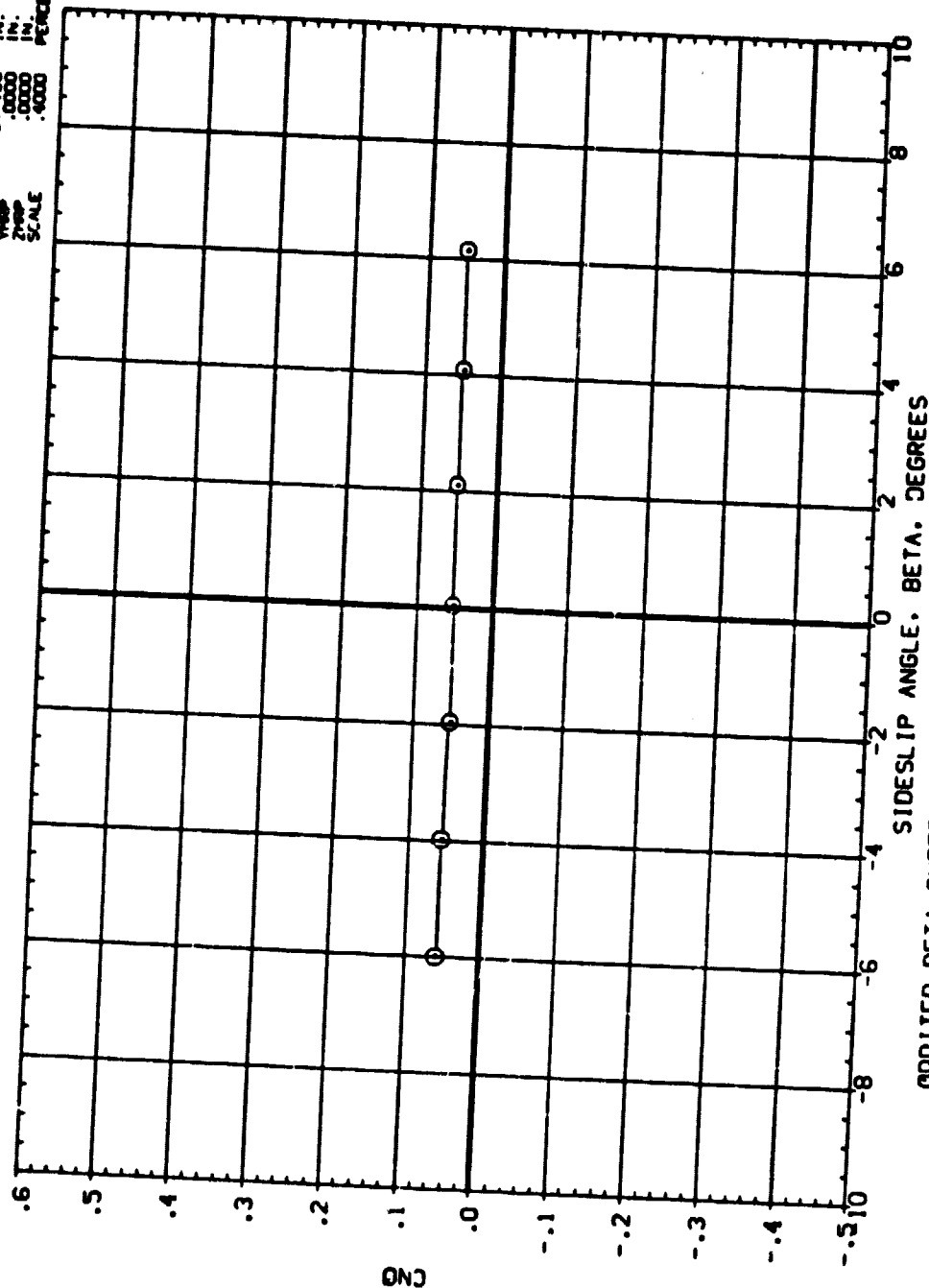


ORBITER BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL: 0 FA28. WSC TVT 656. CONFIG. CONVEX VING GAP VAL

REFERENCE INFORMATION
 PREP 9.1580 IN.
 LREF 5.1612 IN.
 WREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERIOD

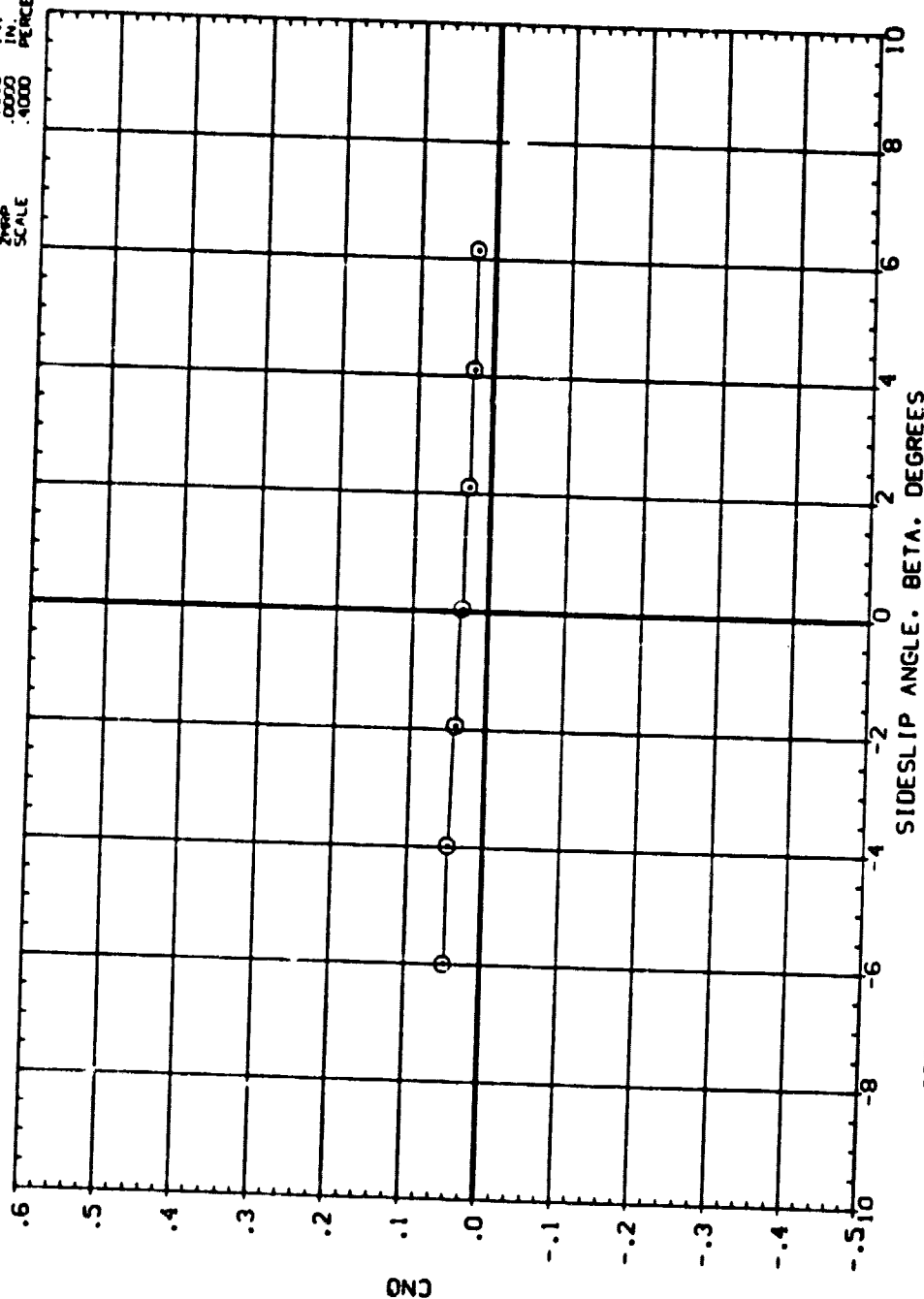


ORBITER BETA SWEEP

(B)MACH = .90

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2003) ○ FA28. MSFC TWT 656. CONFIG. 00WZ22 VING GAP VAX

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



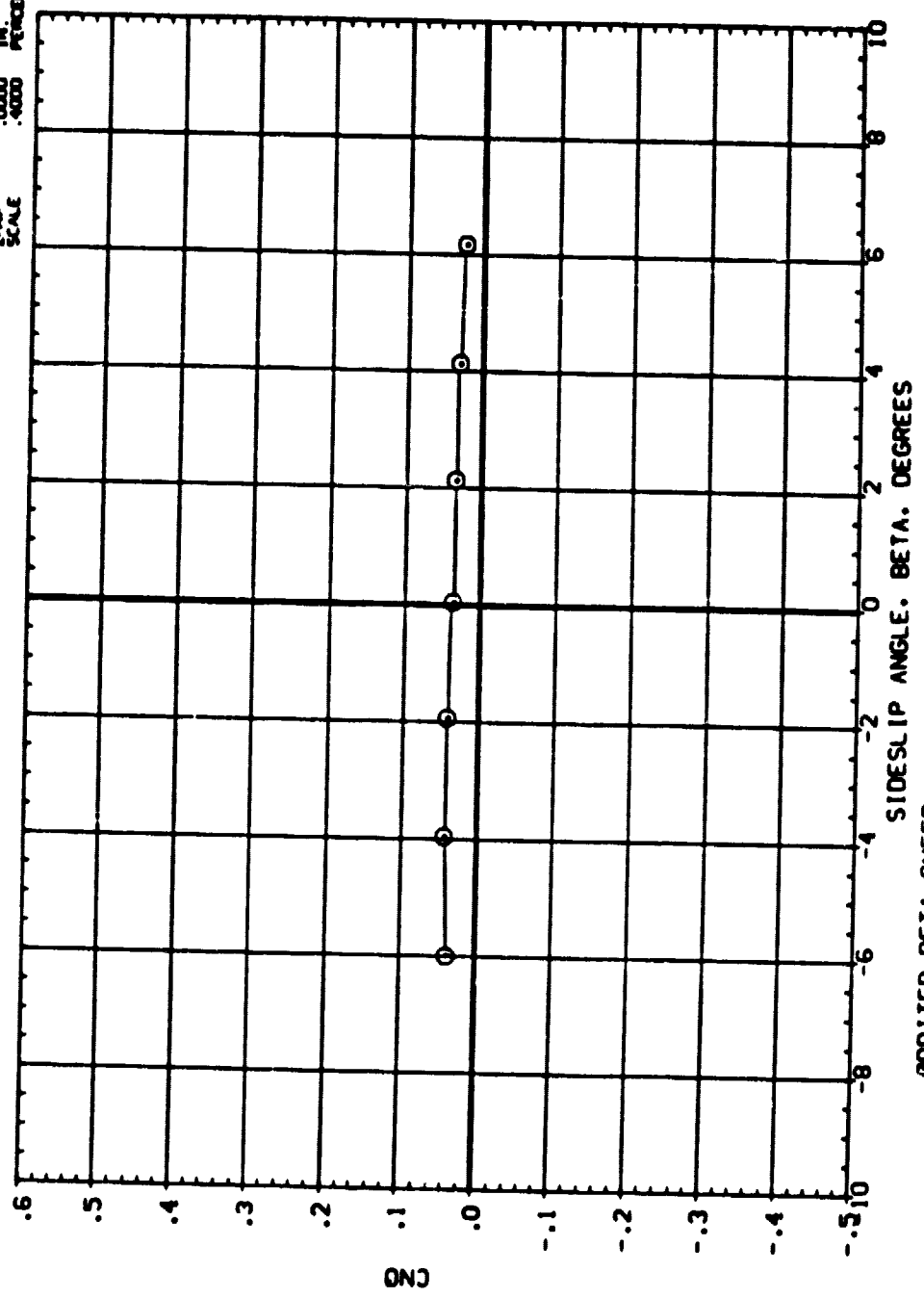
ORBITER BETA SWEEP

(C)MACH = 1.05

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DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA203) O FA20. MSC TWT 656. CONFIG. 024222 :ING GAP VAL

REFERENCE INFORMATION
 SREF 8.1580 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

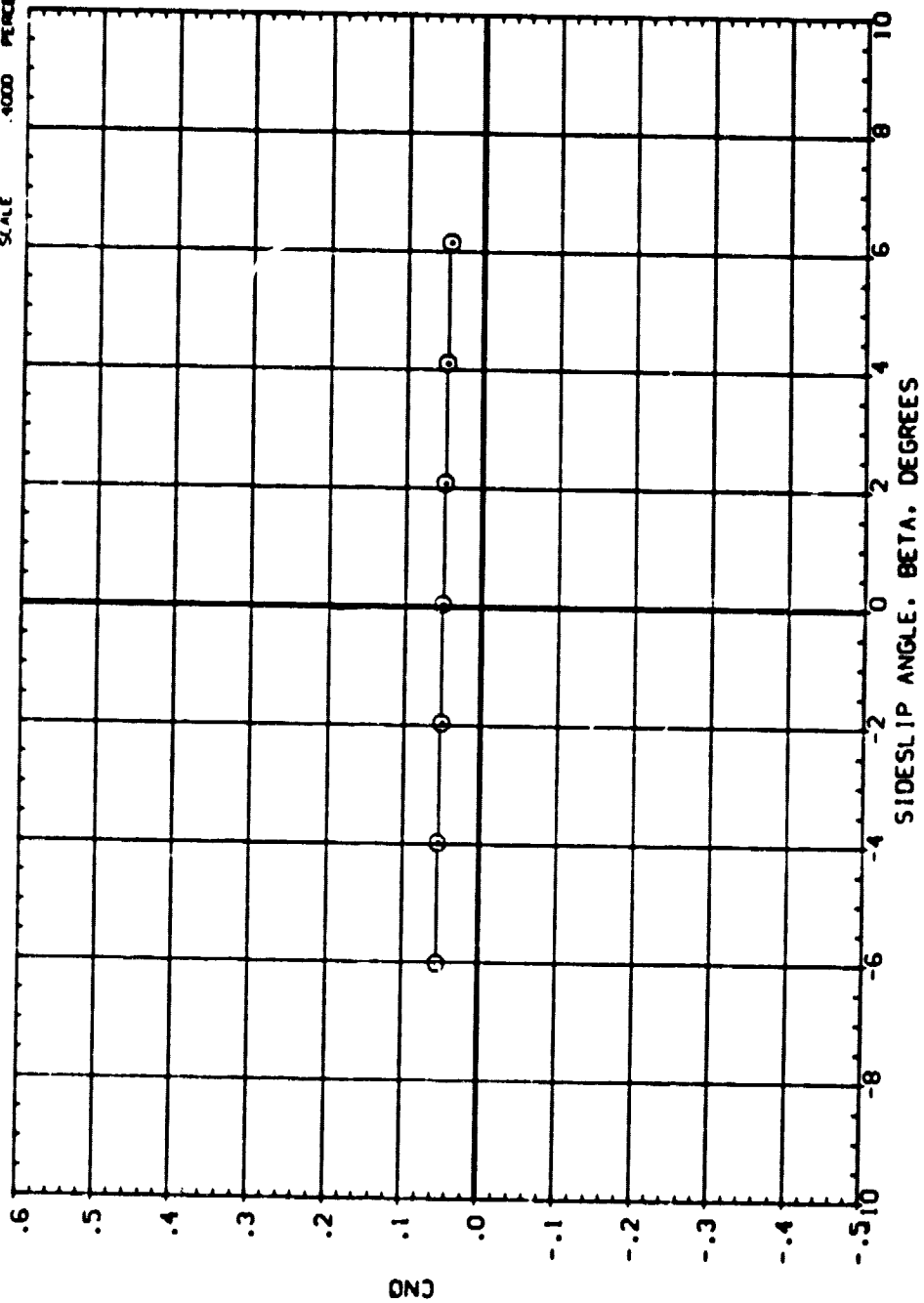


ORBITER BETA SWEEP

(D)MACH = 1.11

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(FA203) O FA20. MSC TWT 656. CONF IG. 02NZE2 VING GAP VAL

REFERENCE INFORMATION
SHEET 6 1500 50. IN
UNIT 3 1612 IN.
SHEET 2 7470 IN.
INSP 2 7120 IN.
YPROP 0.000 IN.
ZPROP 0.000 IN.
SCALE 4000 PERCENT

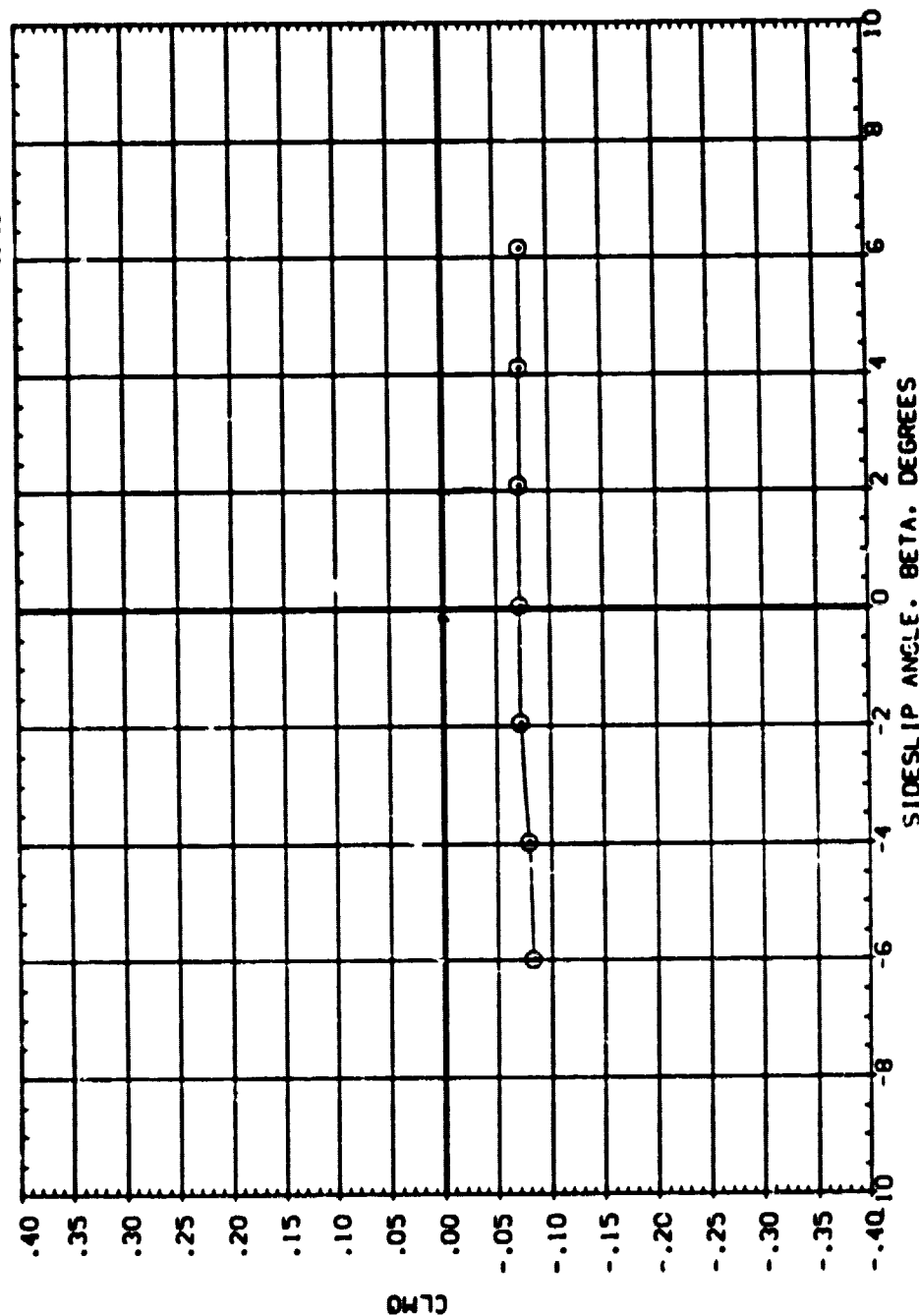


ORBITER BETA SWEEP

(E)MACH = 1.25

DATA SET SWEEP. CONFIGURATION DESCRIPTION
(FA2003) ○ FA20. MPFC TWT 656. CONF IG. 02V2E2 VING GAP VAX

REFERENCE INFORMATION
SWEEP 6.1500 IN.
LINEF 5.1612 IN.
SWEEP 3.7470 IN.
SWEEP 2.7120 IN.
SWEEP .0000 IN.
SWEEP .0000 IN.
SCALE .4000 PERCENT



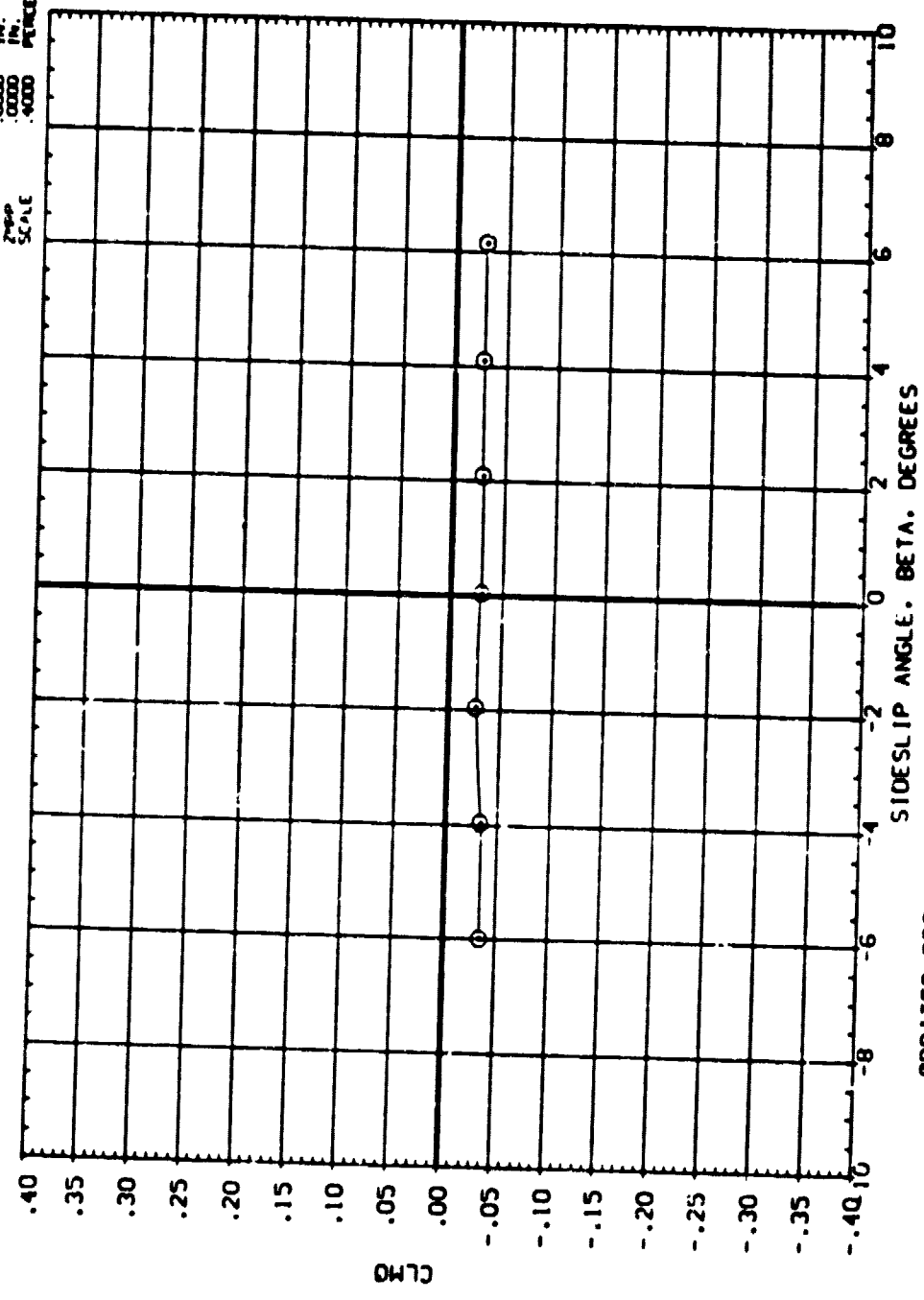
ORBITER BETA SWEEP

(A)MACH = .60

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DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2003) O FA20. MSC TWT 656. CONFIG. 02V2E2 WING GAP MAX

REFERENCE INFORMATION
 SREF 6.1580 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 PREF 2.7120 IN.
 TREF .0000 IN.
 TREF .0000 IN.
 SCALE .4000 PERCENT

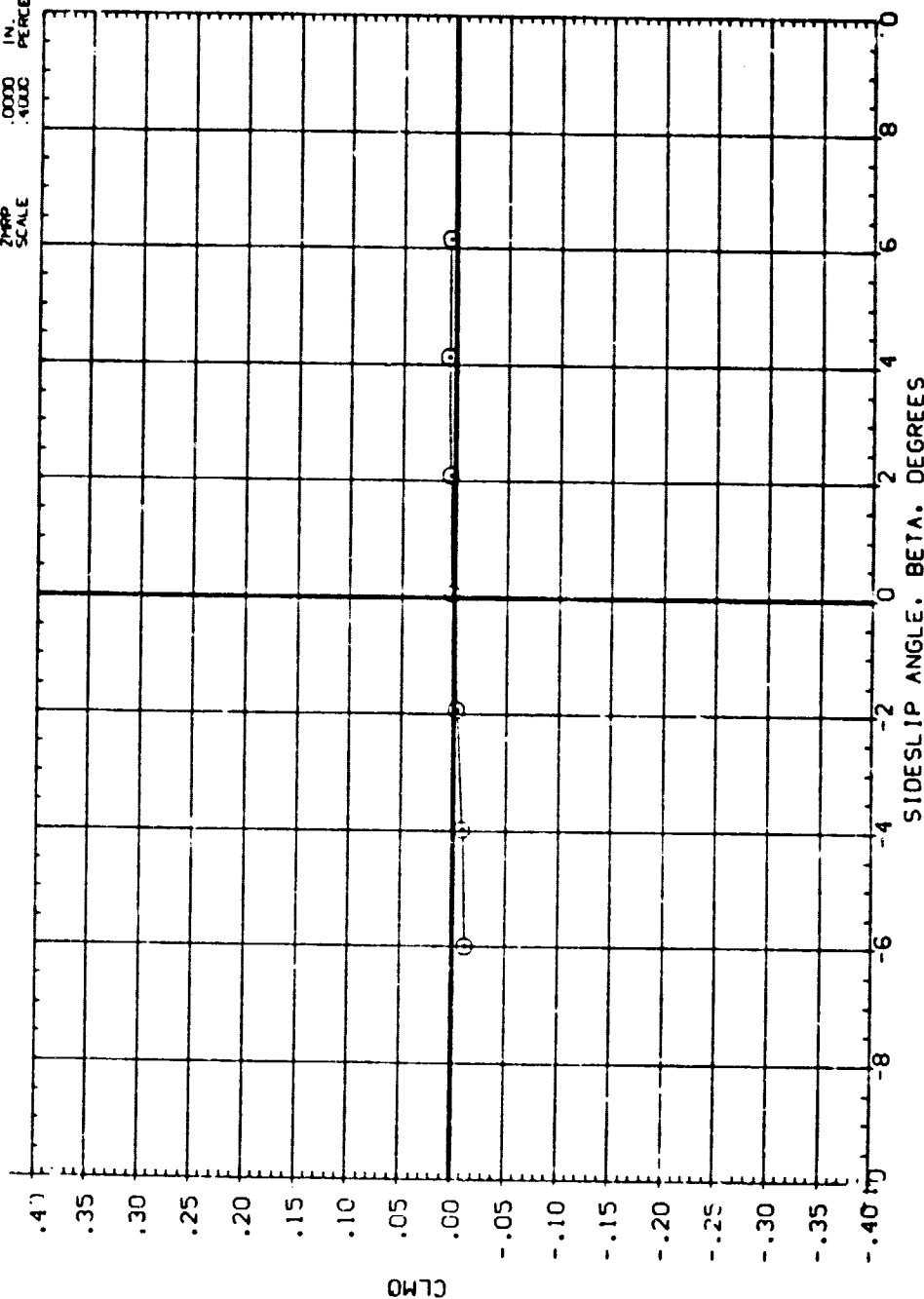


ORBITER BETA SWEEP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(FA2803) O FA28. MSFC TWT 656. CONFIG. 02V2E2 VING GAP VAX

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 3.1512 IN.
BREF 3.7470 IN.
VREF 2.7120 IN.
ZREF .0000 IN.
SCALE .4000 PERCENT



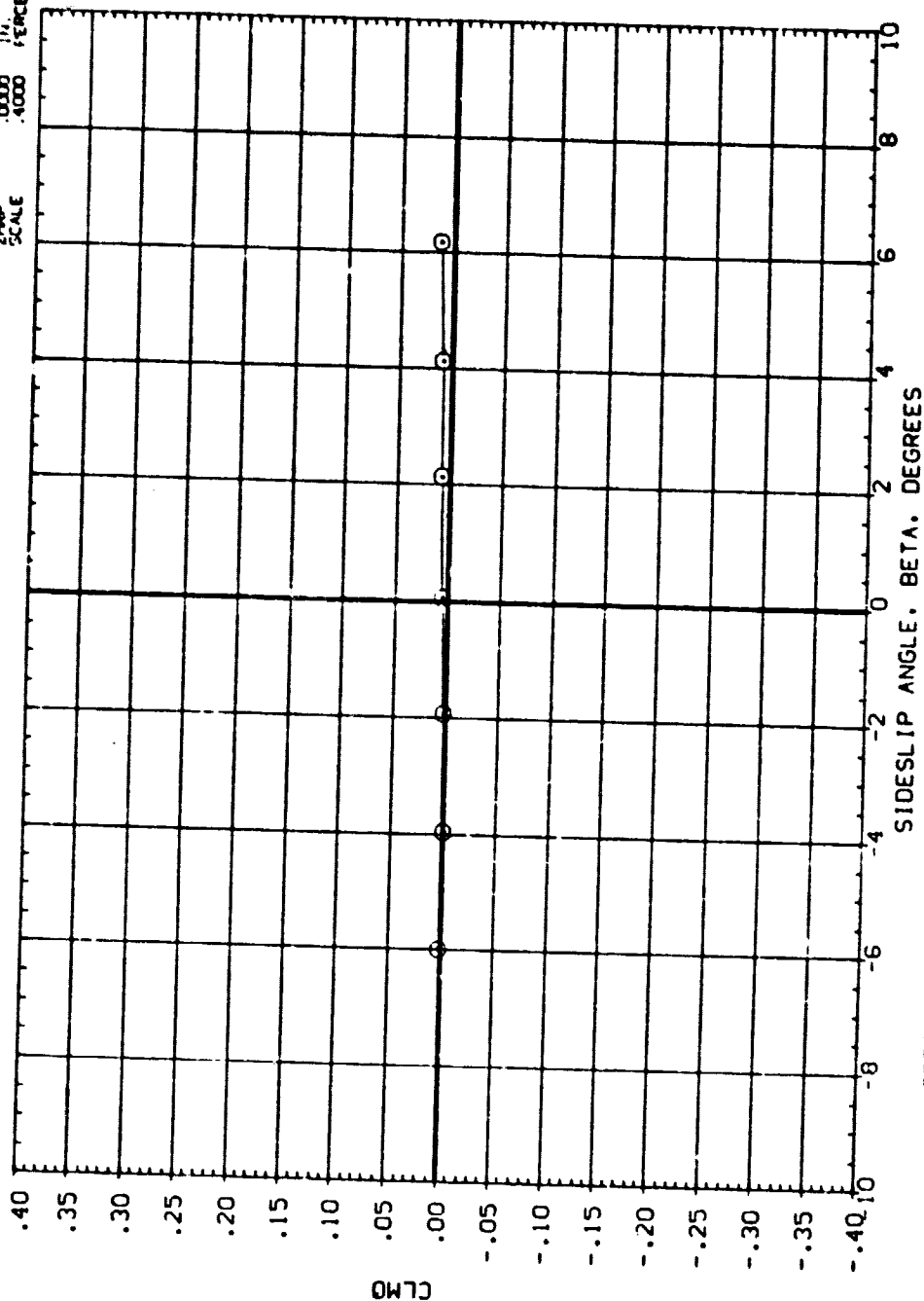
ORBITER BETA SWEEP

(C)MACH = 1.05

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OF POOR QUALITY

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2803) ○ FA28, MSC TWT 656, CONFIG. 02N2E2 VING GAP VAX

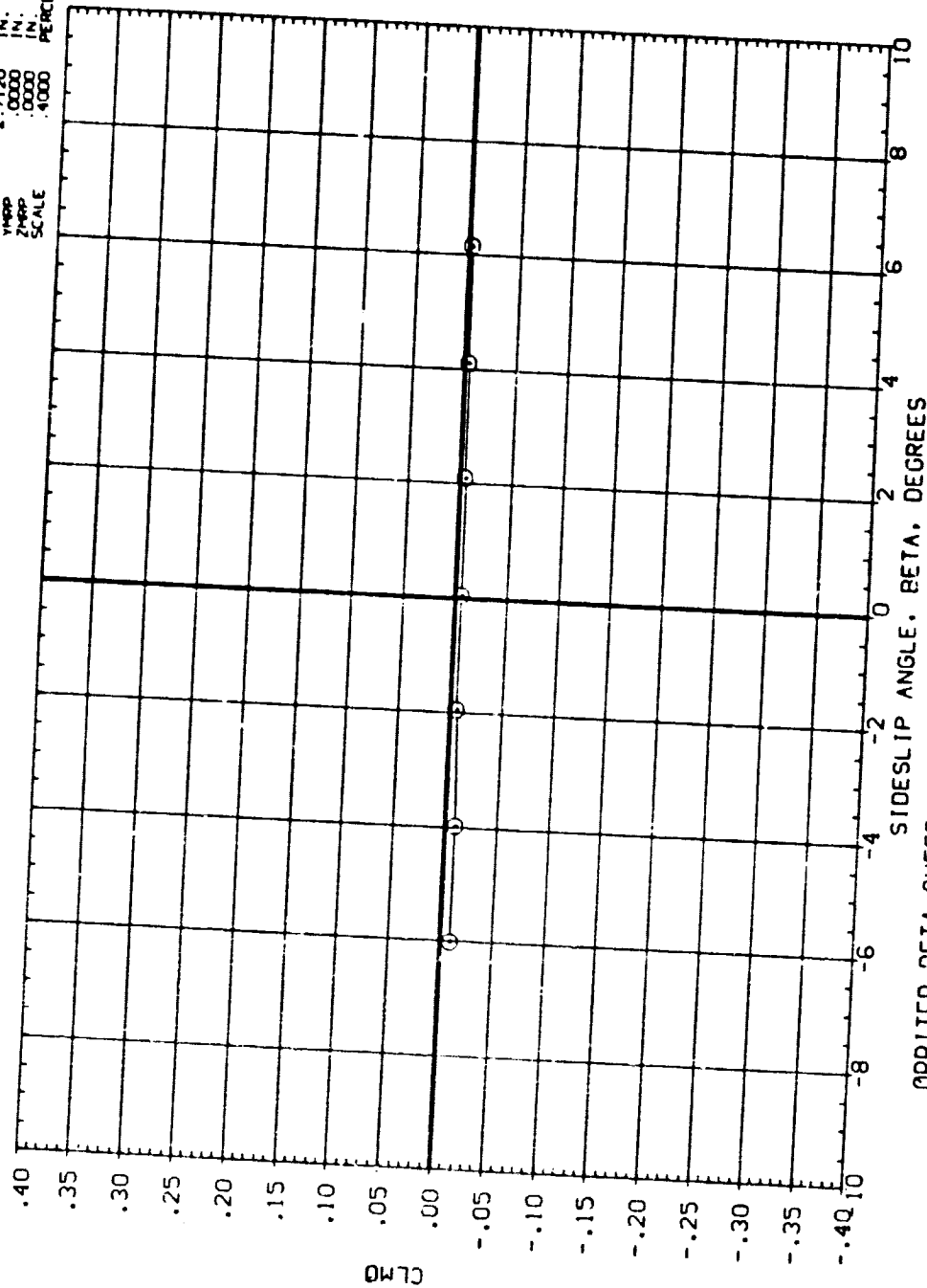
REFERENCE INFORMATION
 SREF 6.1980 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF 0.0000 IN.
 ZREF 0.0000 IN.
 SCALE .4000 PERCENT



(D)MACH = 1.11

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
(FA2803) ○ FA28. MSC TUT 656. CONFIG. 02V2E2 VING GAP VAX

REFERENCE INFORMATION
SREF 6.1880 SQ. IN
LREF 3.612 IN.
BREF 3.7170 IN.
XMRP 2.7170 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .4000 PERCENT

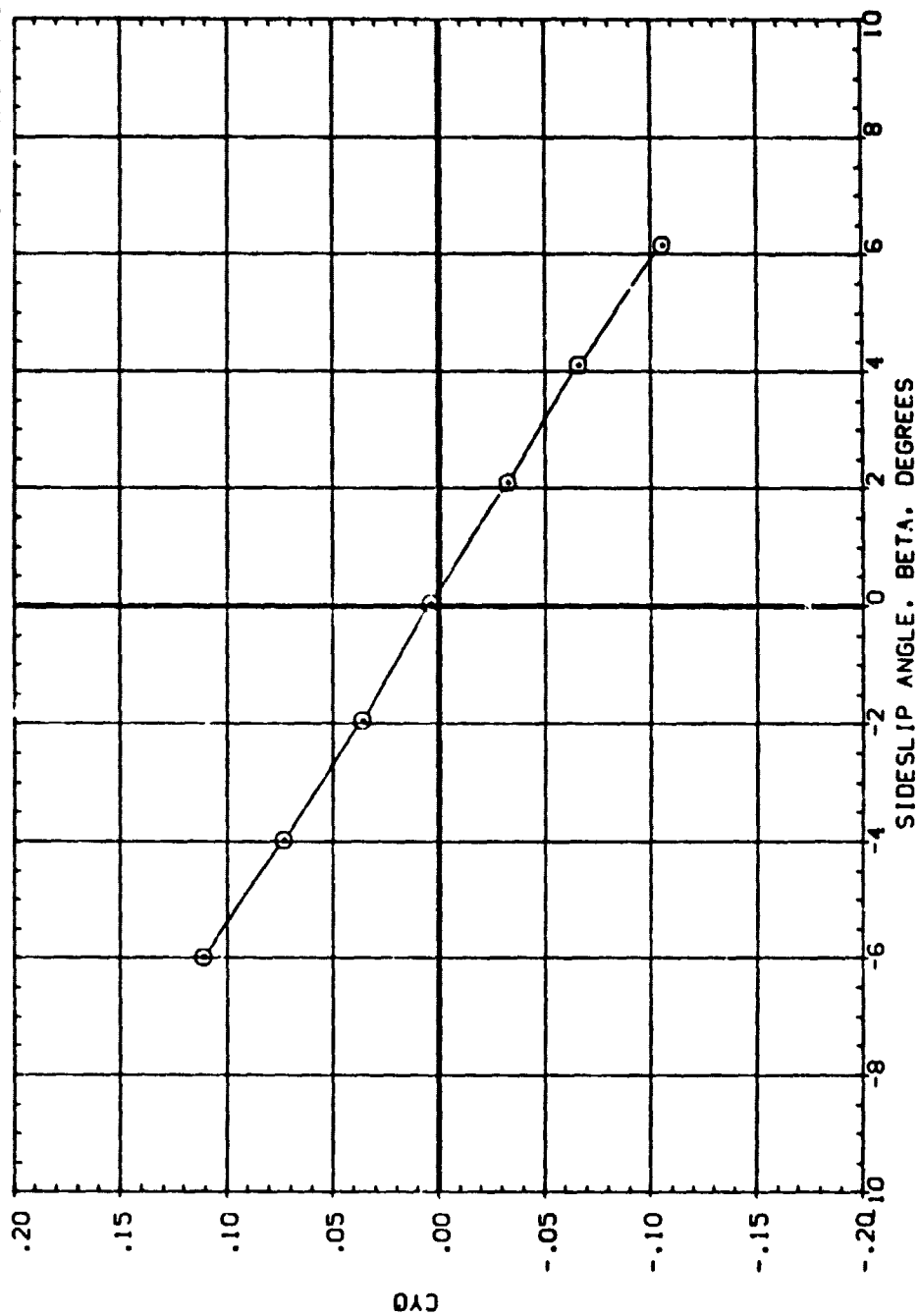


ORBITER BETA SWEEP

(E)MACH = 1.25

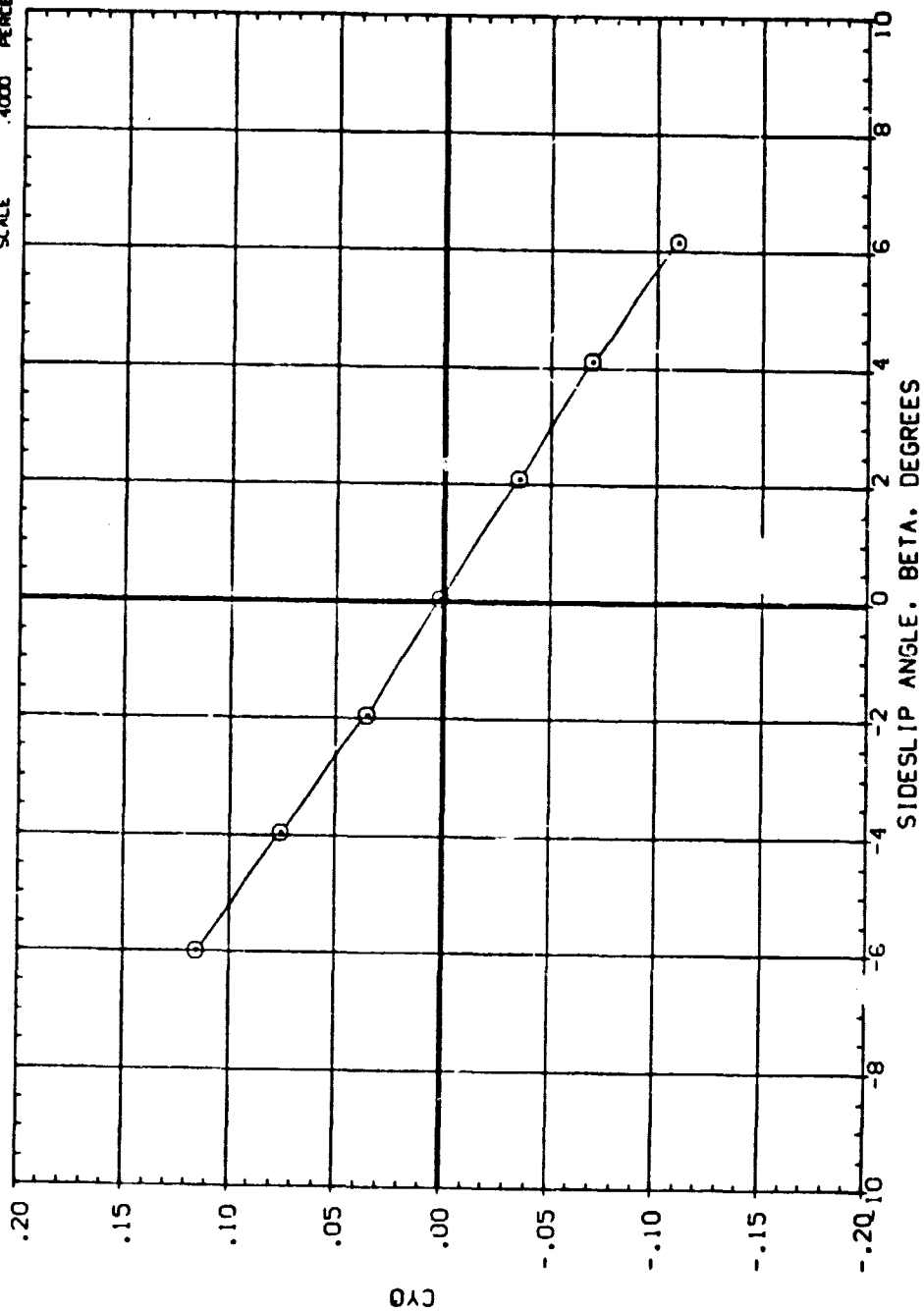
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(FA2803) O	FA28. MSFC TOT 656. CONFIG. 02V2E2 VING GAP VAX

REFERENCE INFORMATION	
SREF	6.1980 SQ. IN.
LREF	5.1612 IN.
BREF	3.7470 IN.
XREF	2.7120 IN.
YREF	.0000 IN.
ZREF	.0000 IN.
SCALE	.0000 PERCENT



DATA SET SYMBOL (FA2803) ○ CONFIGURATION DESCRIPTION FA28. MSFC TWT 656. CONF10. 02N2E2 WING GAP VAX

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

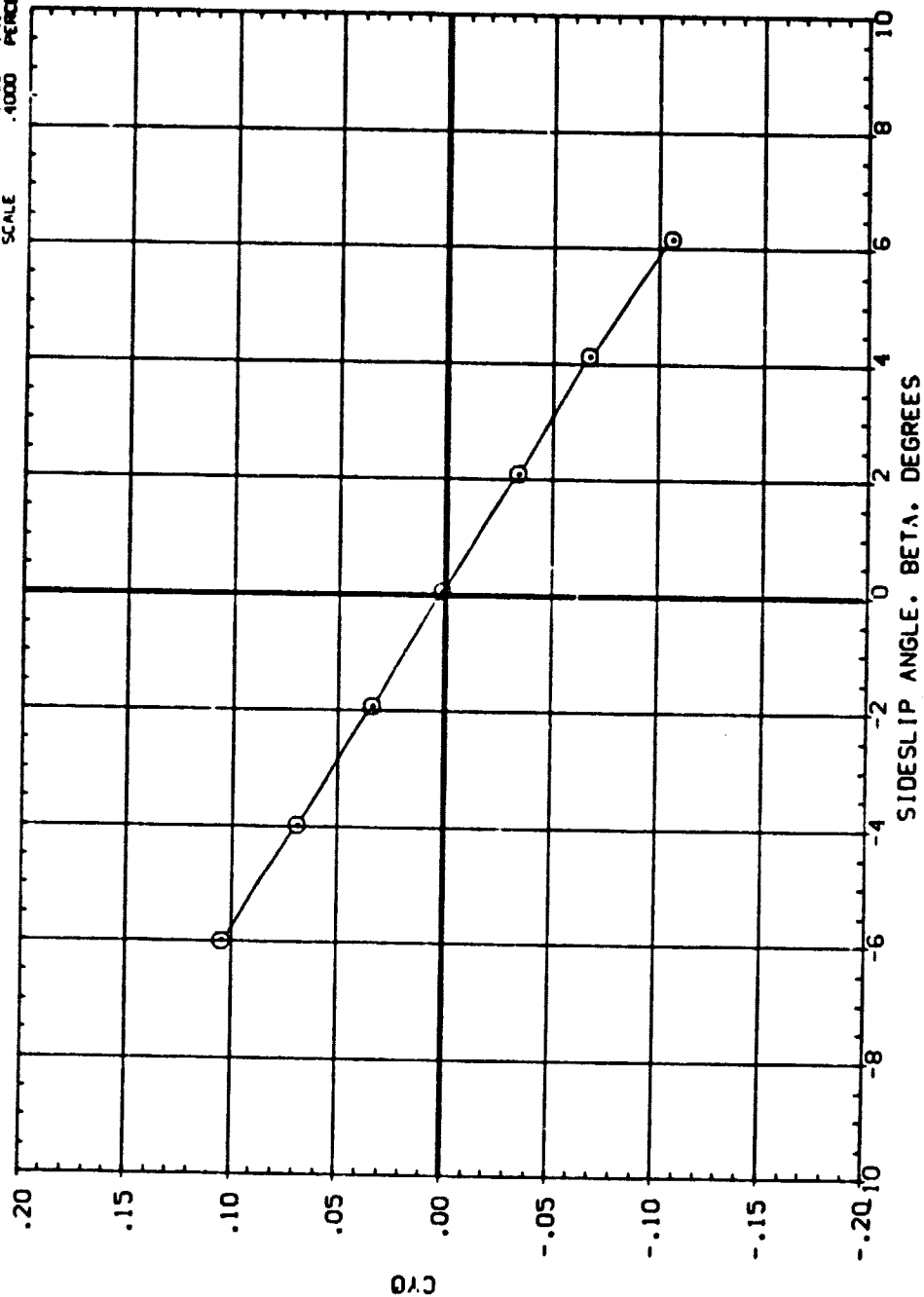


ORBITER BETA SWEEP

(B)MACH = .90

DATA SET SYMBOL: (FA2803) \bigcirc CONFIGURATION DESCRIPTION: FA28. MSFC TVT 656. CONF IG. 02V2E2 VING GAP VAX

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT

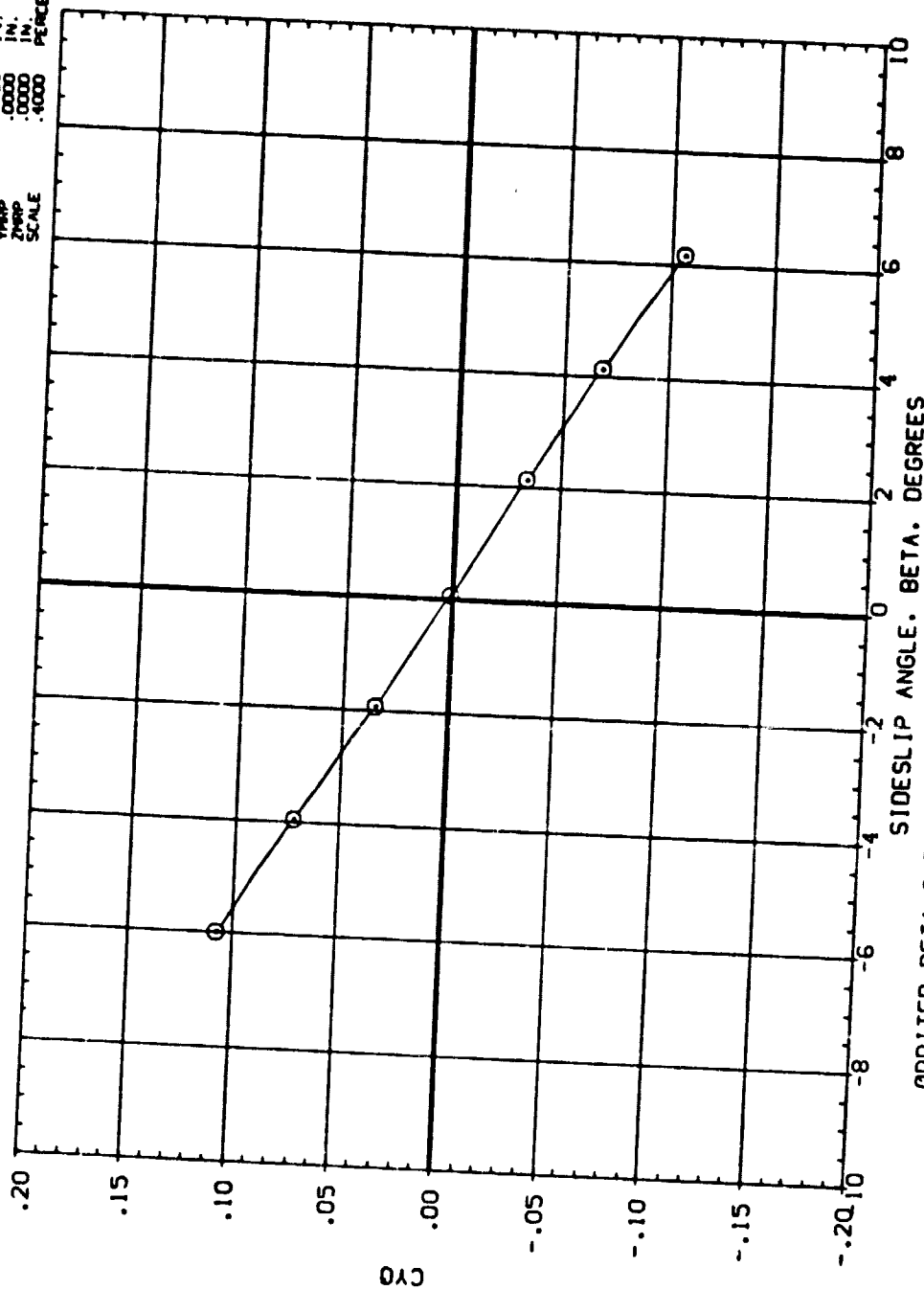


ORBITER BETA SWEEP

(C)MACH = 1.05

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2803) ○ FA28. MSFC TWT 656. CONFIG. 020X22 VIIG GAP VAX

REFERENCE INFORMATION
 SREF 6.1580 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 VREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

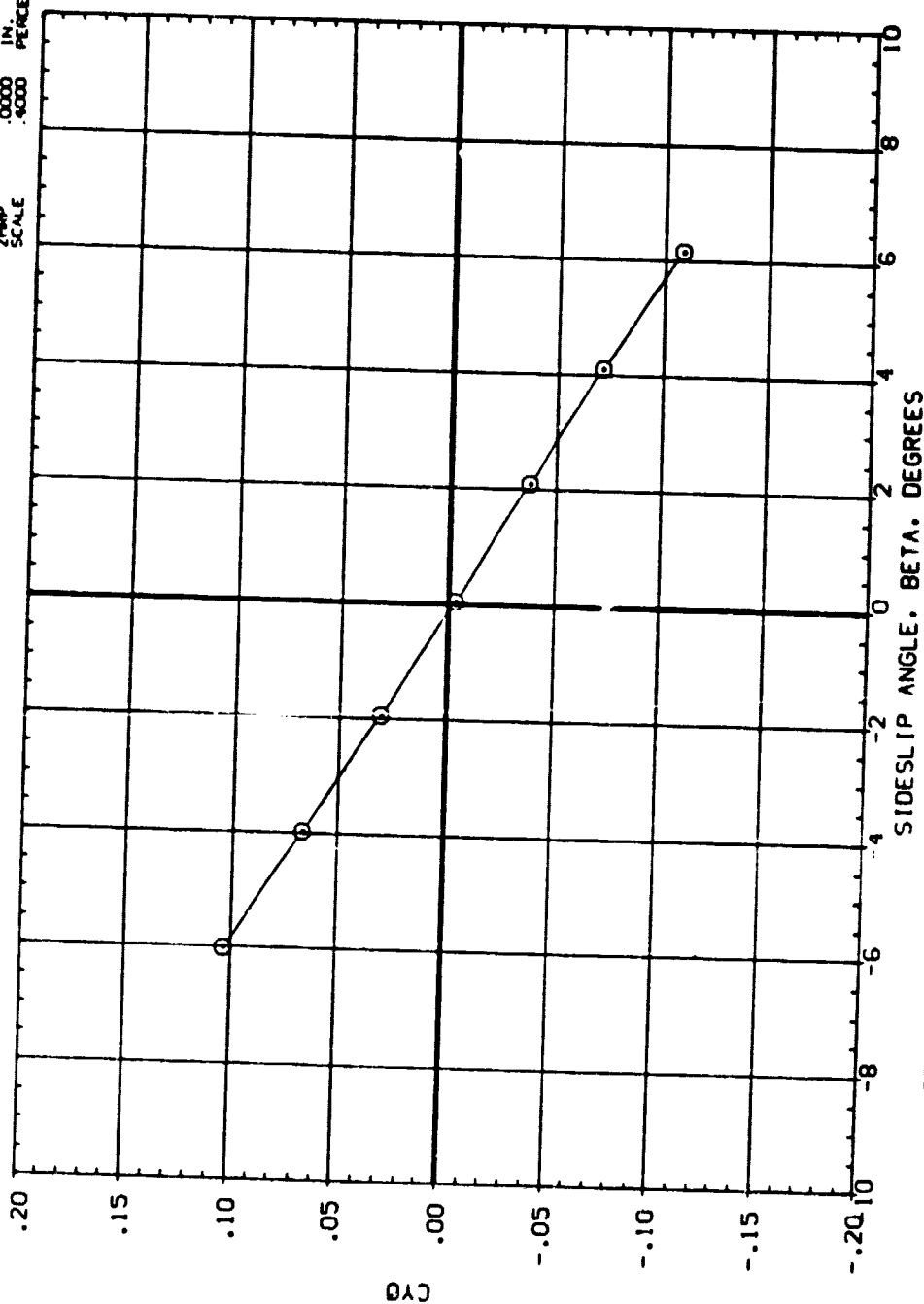


ORBITER BETA SWEEP

(O)MACH = 1.11

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2803) ○ FA28. MSC TVT 656. CONFIG. 02N2E2 VING GAP MAX

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 JREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

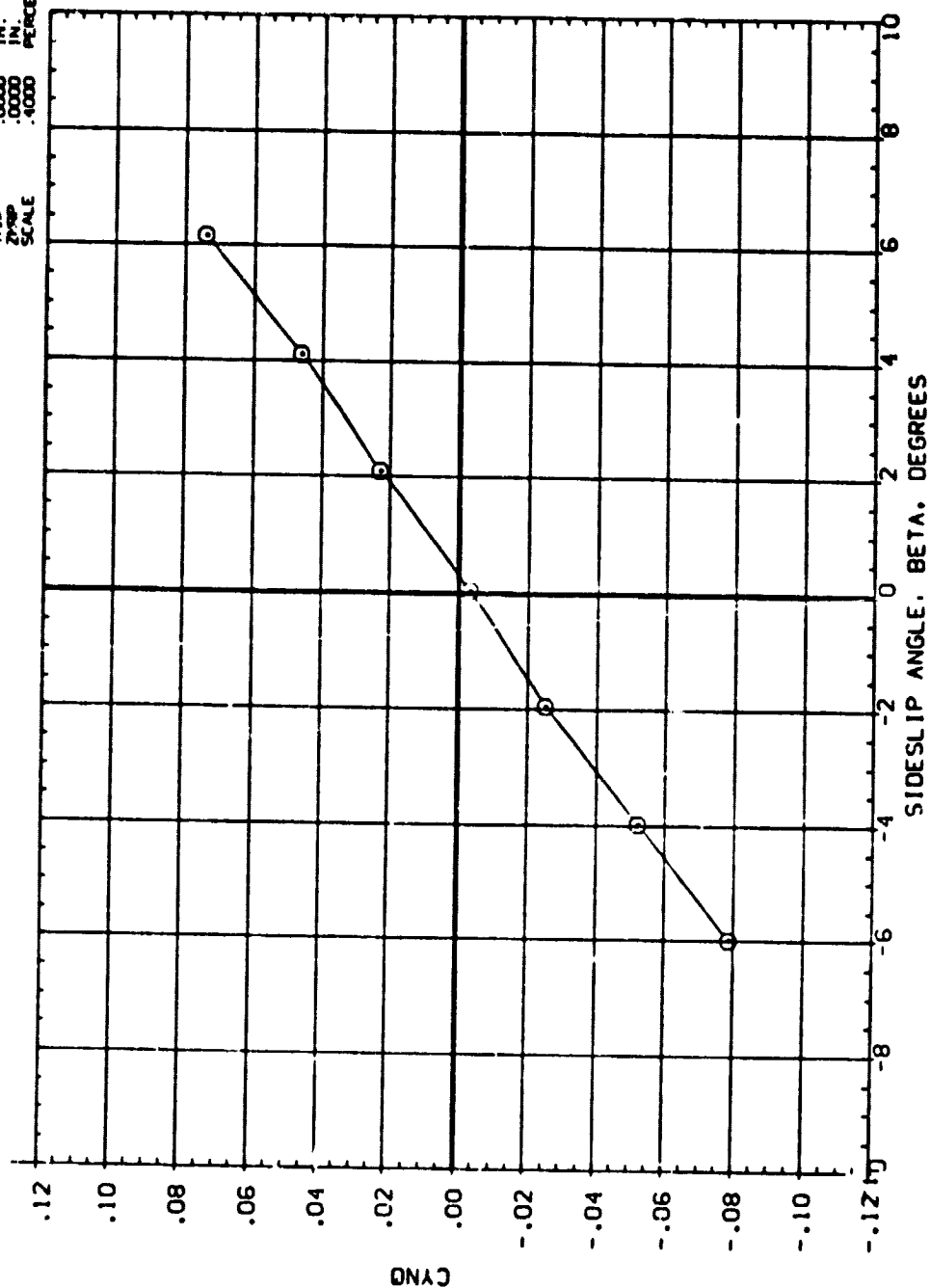


ORBITER BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2003) O FA28. MSFC TWT 656. CONFIG. 02VZ22 VING GAP VAR

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

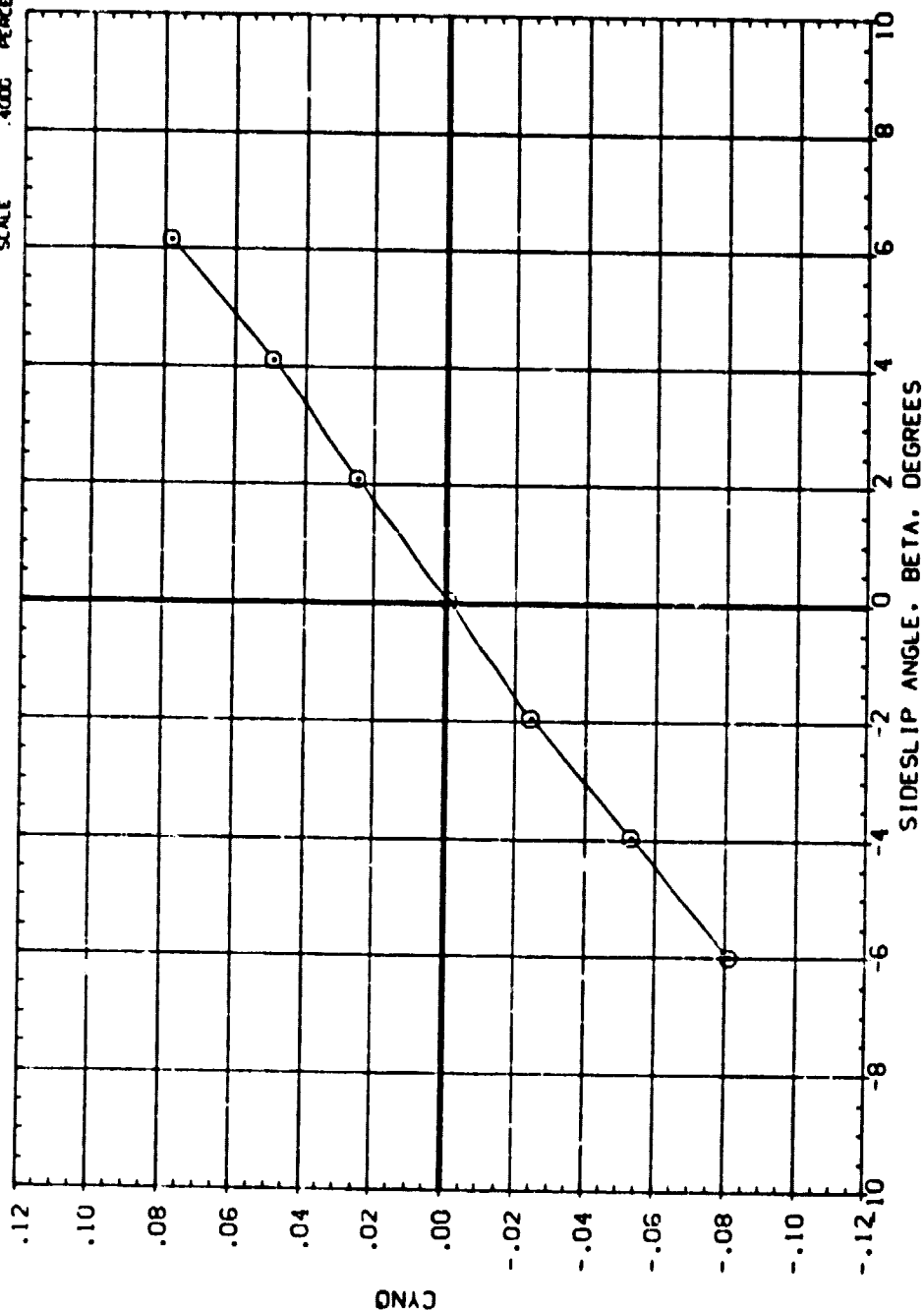


ORBITER BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2803) O FA28. MSFC TWT 656. CONFIG. 02V2E2 VING GAP VAX

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 SREF 3.1612 IN.
 SREF 3.7470 IN.
 VREF 2.7120 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

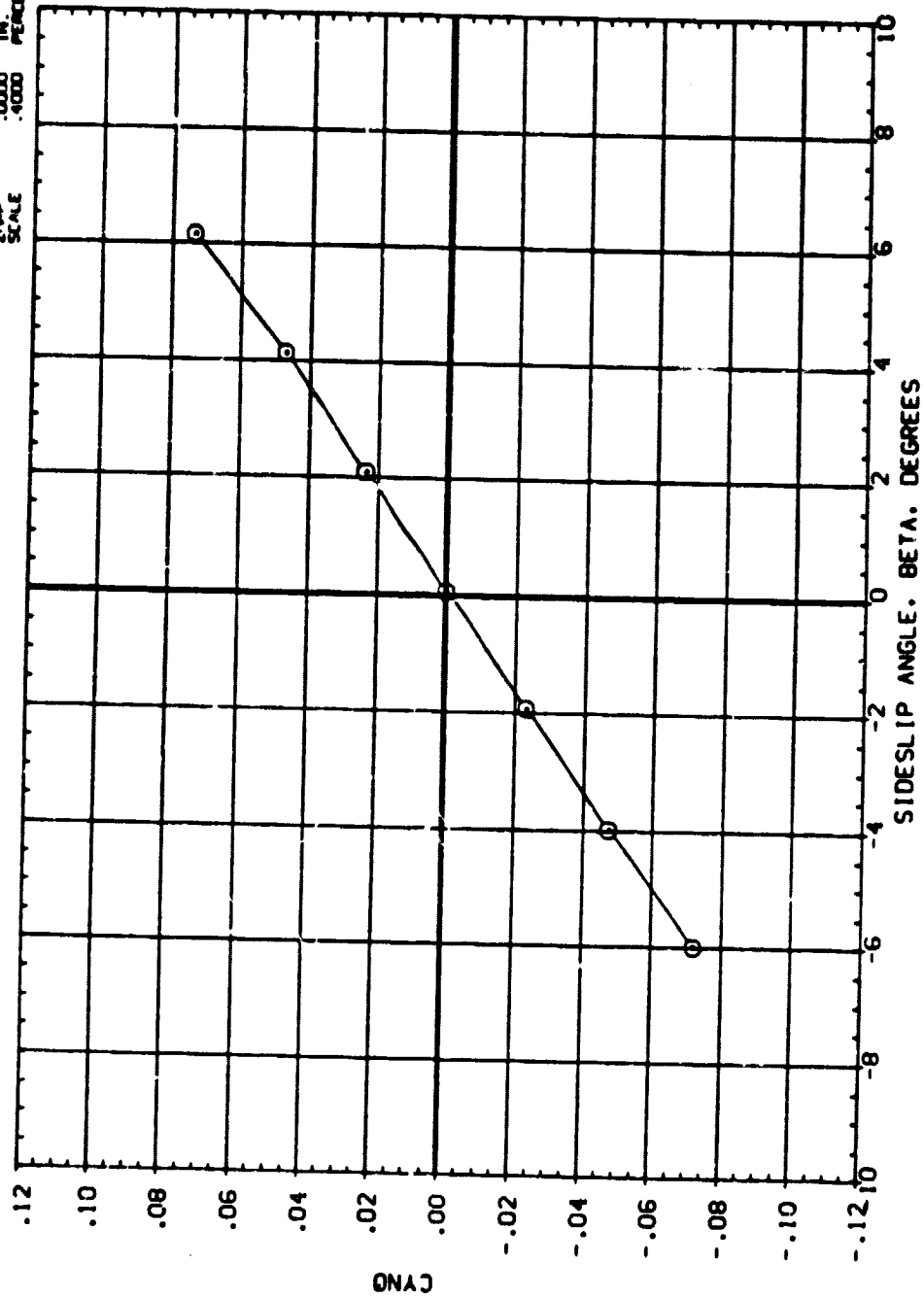


ORBITER BETA SWEEP

(B)MACH = .90

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
(FA2803) O FA28. MSC TVT 656. CONF 16. 02022 VING GAP MAX

REFERENCE INFORMATION
SWEF 6.1800 IN.
LREF 5.1612 IN.
BREF 3.7476 IN.
YREF 2.7120 IN.
YREF 0.0000 IN.
ZREF 0.0000 IN.
SCALE .4000 PERCENT

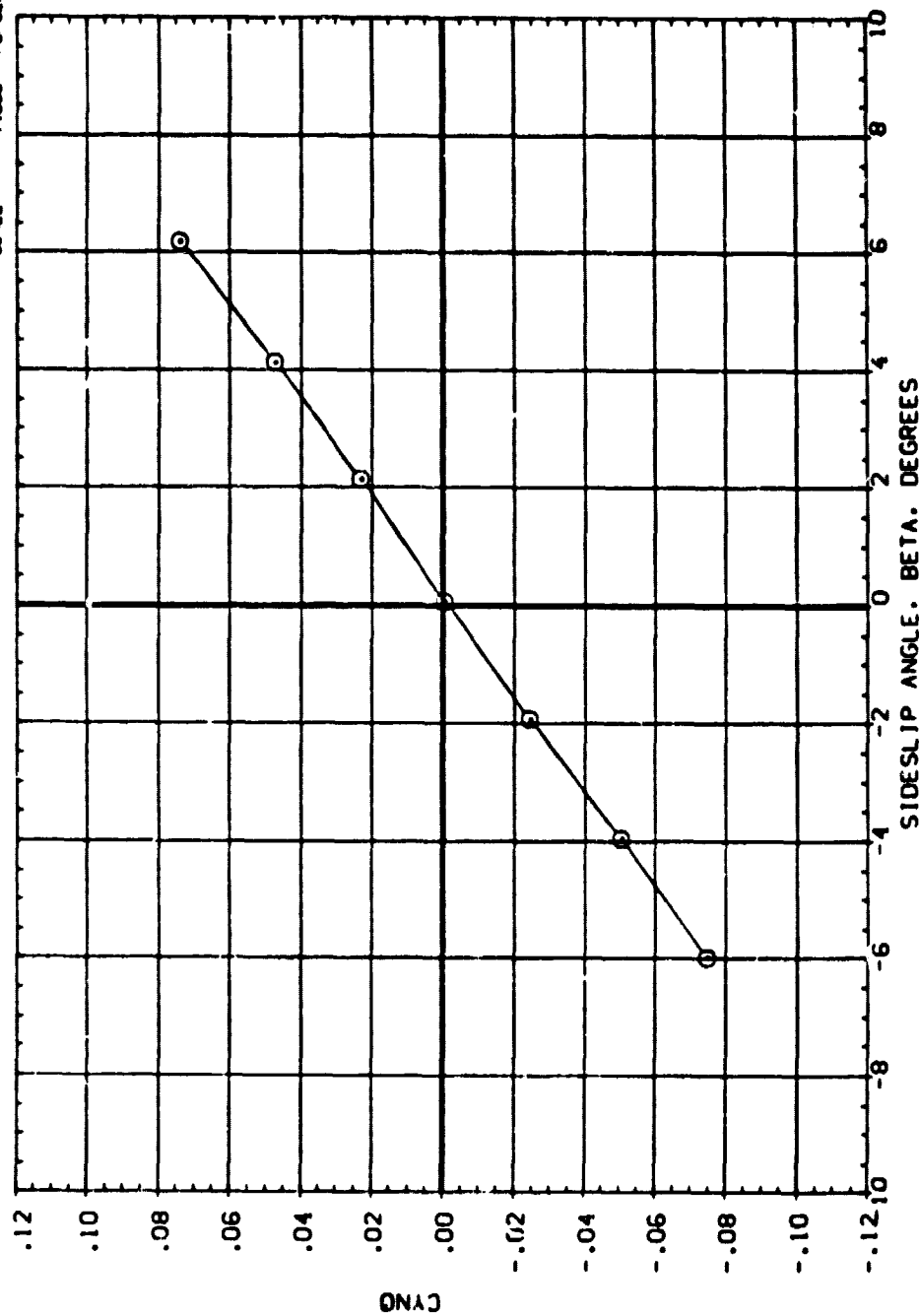


ORBITER BETA SWEEP

(C)MACH = 1.05

DATA SET SYMBOL: CONF IGURATION DESCRIPTION
 (FA2031) O FA20. WSC TWT 65G. CONFIG. ORBITER VING CAP VAX

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .0000 PERCENT

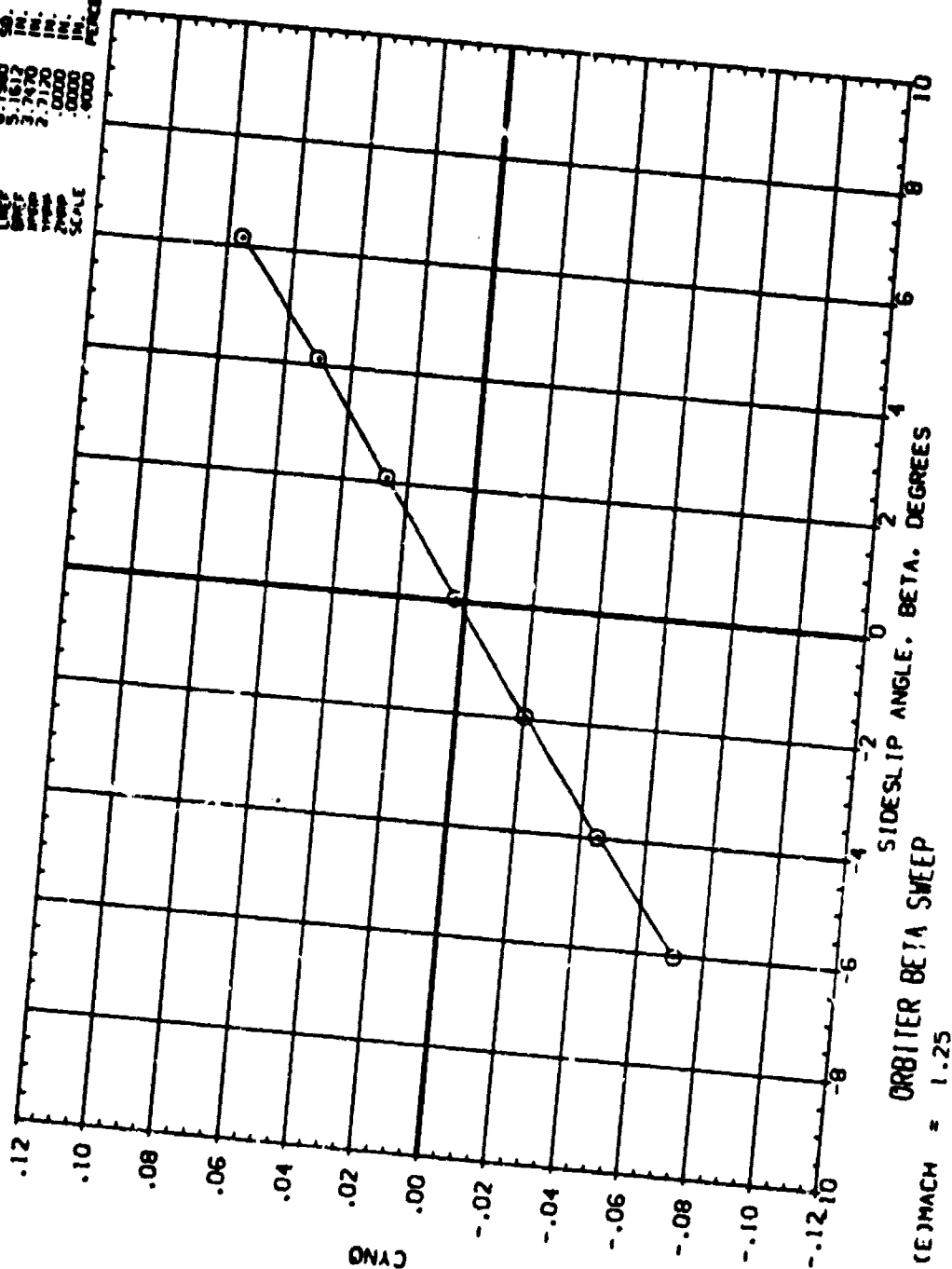


ORBITER BETA SWEEP

(O)MACH = 1.11

DATA SET SYNO. CONFIGURATION DESCRIPTION
 (F42021) ○ F420. HSC TVT 625. CONFIC. CONZEL VING GAP MAX

REFERENCE INFORMATION
 SET 6.1280 IN. IN.
 LUT 5.1612 IN. IN.
 SUT 3.7470 IN. IN.
 TAP 2.7120 IN. IN.
 ZAP .0000 IN. IN.
 SCALE .0000 IN. IN.
 PERIOD .0000 IN. IN.

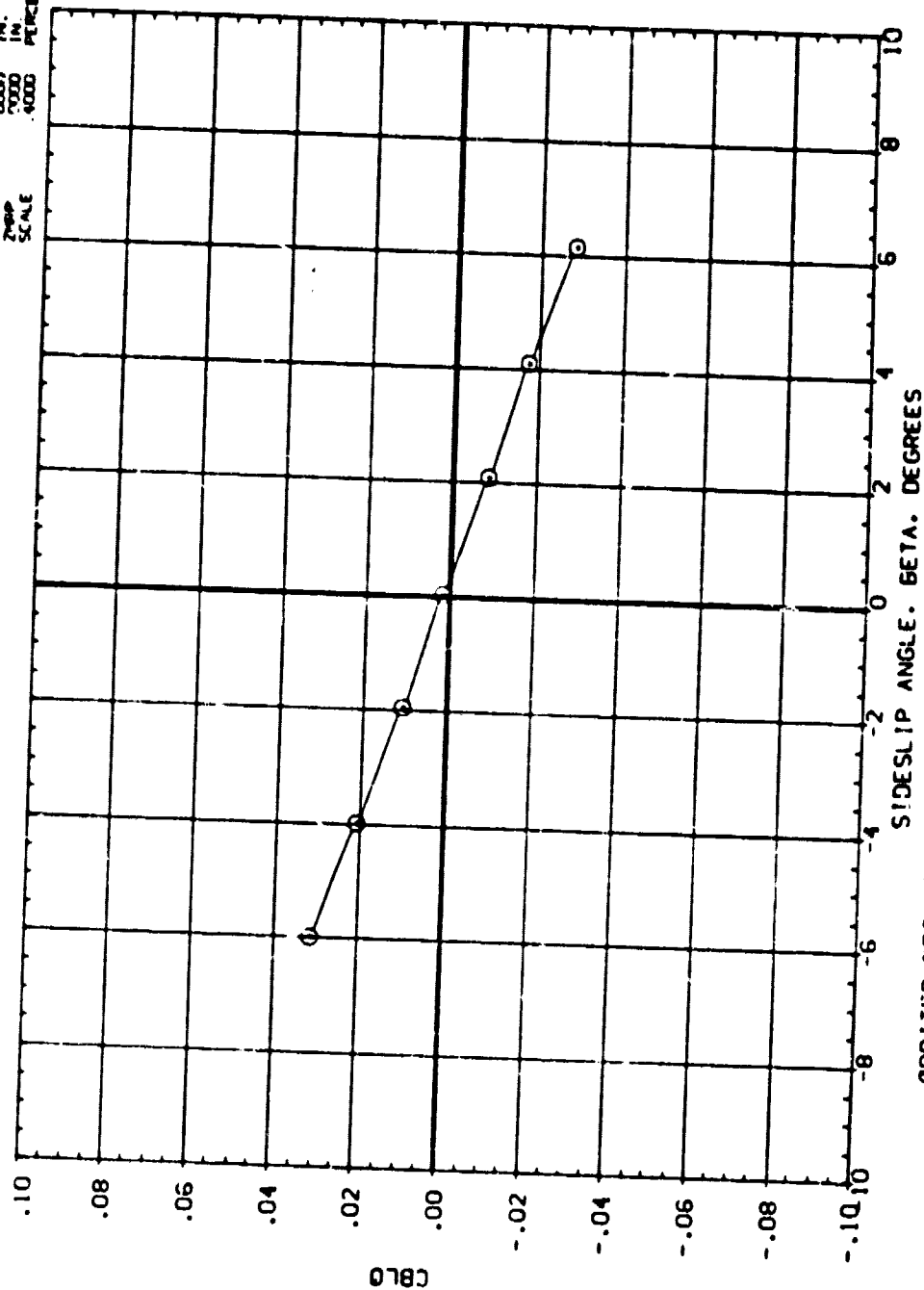


ORBITER BETA SWEEP
 (E)MACH = 1.25

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DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2803) ○ FA28, MSC TWT 656, CONFIG. 03N2E2 WING GAP VAL

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 3.1617 14. IN
 BREF 3.1470 14. IN
 YREF 2.7120 14. IN
 ZREF 0.0007 14. IN
 SCALE 4000 PERCENT

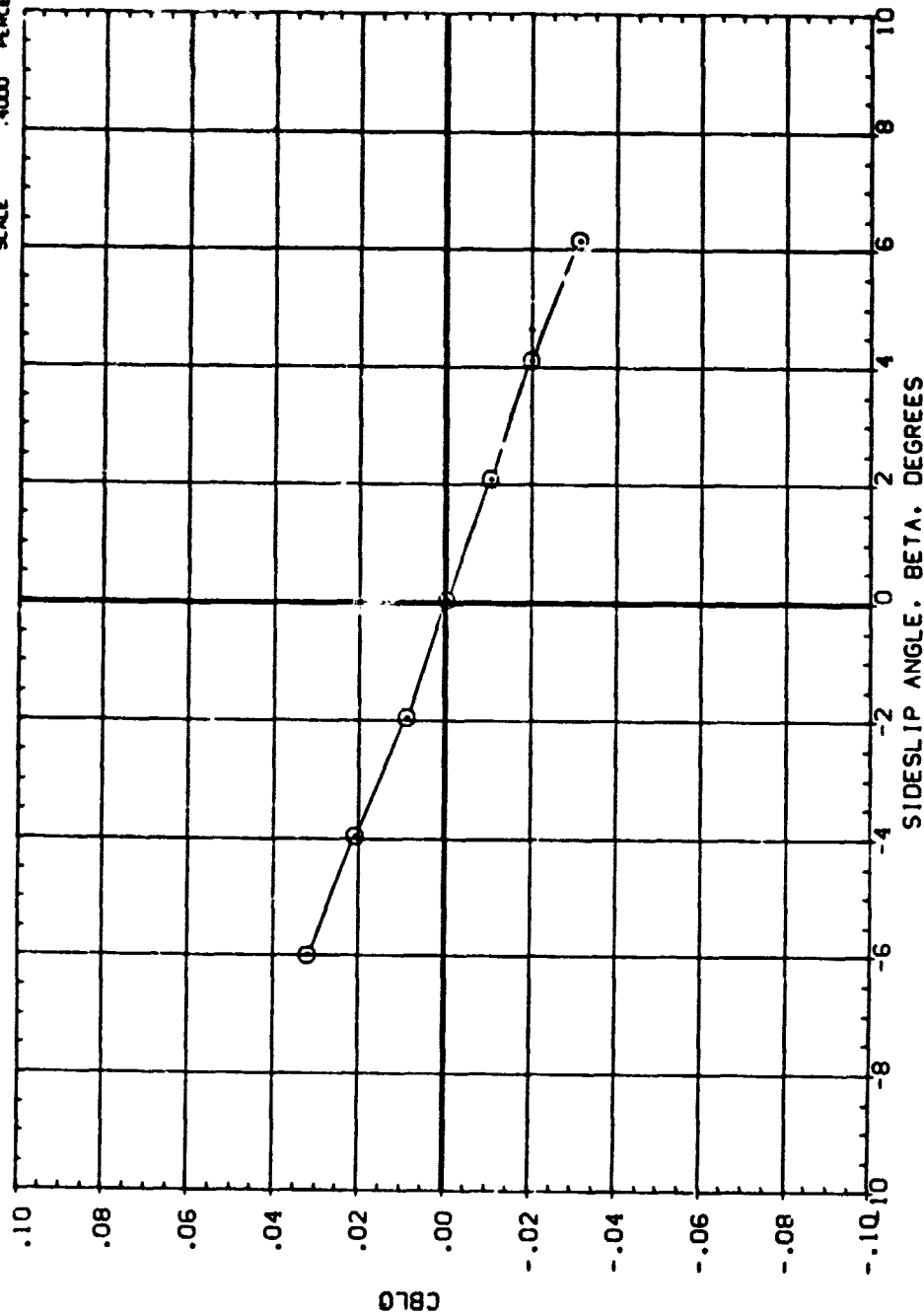


ORBITER BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(FA2803) O FA28. MSFC TWT 656. CONFIG. 02V2E2 VING GAP VAR

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1612 IN.
BREF 3.7470 IN.
WREF 2.7120 IN.
VREF .0000 IN.
ZREF .0000 IN.
SCALE .4000 PERCENT



ORBITER BETA SWEEP

(B)MACH = .90

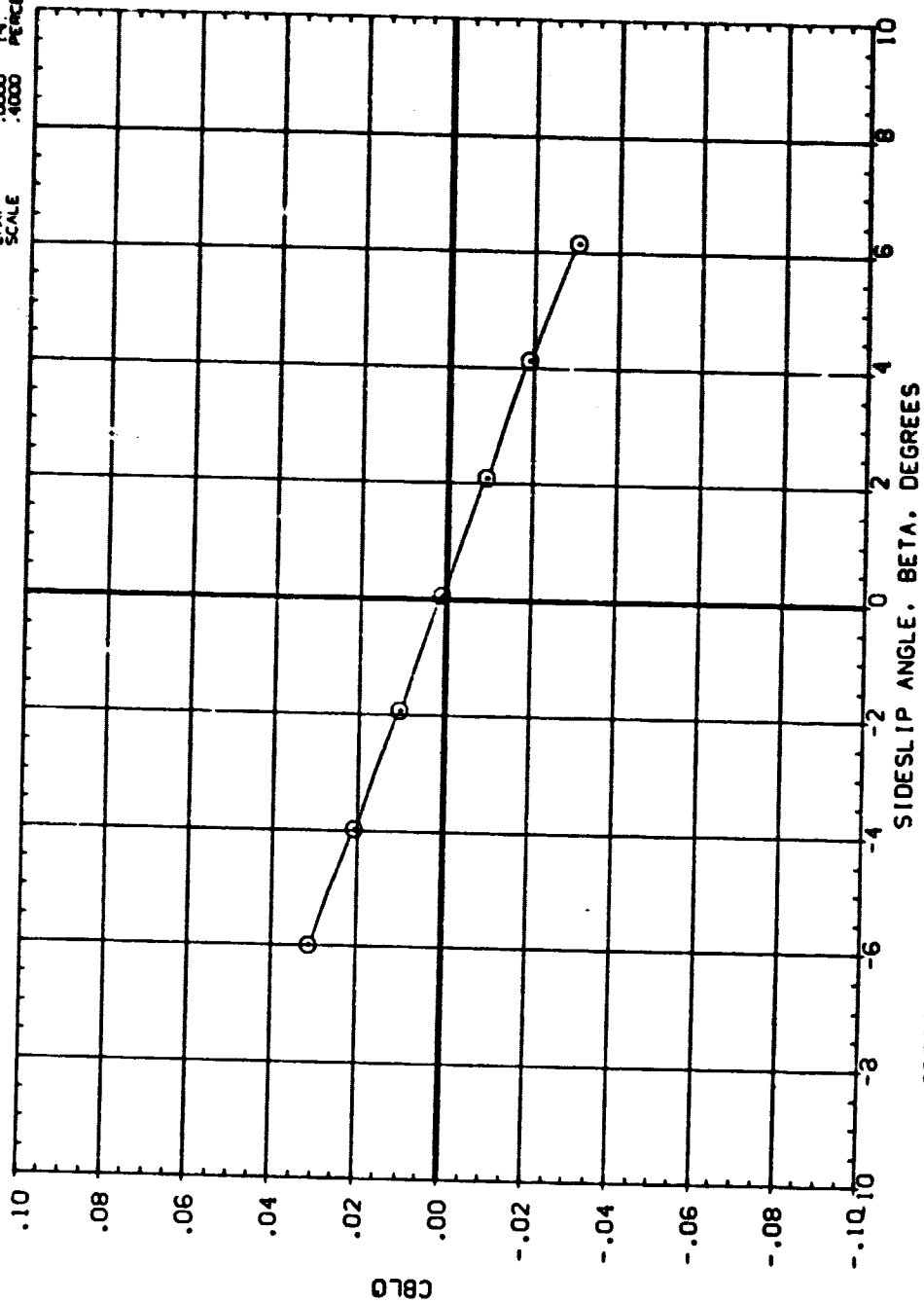
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OF POOR QUALITY

C-2

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2803) ○ FA28. MSFC TVT 656. CONF IG. 02V2E2 SINC GAP VAX

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7130 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

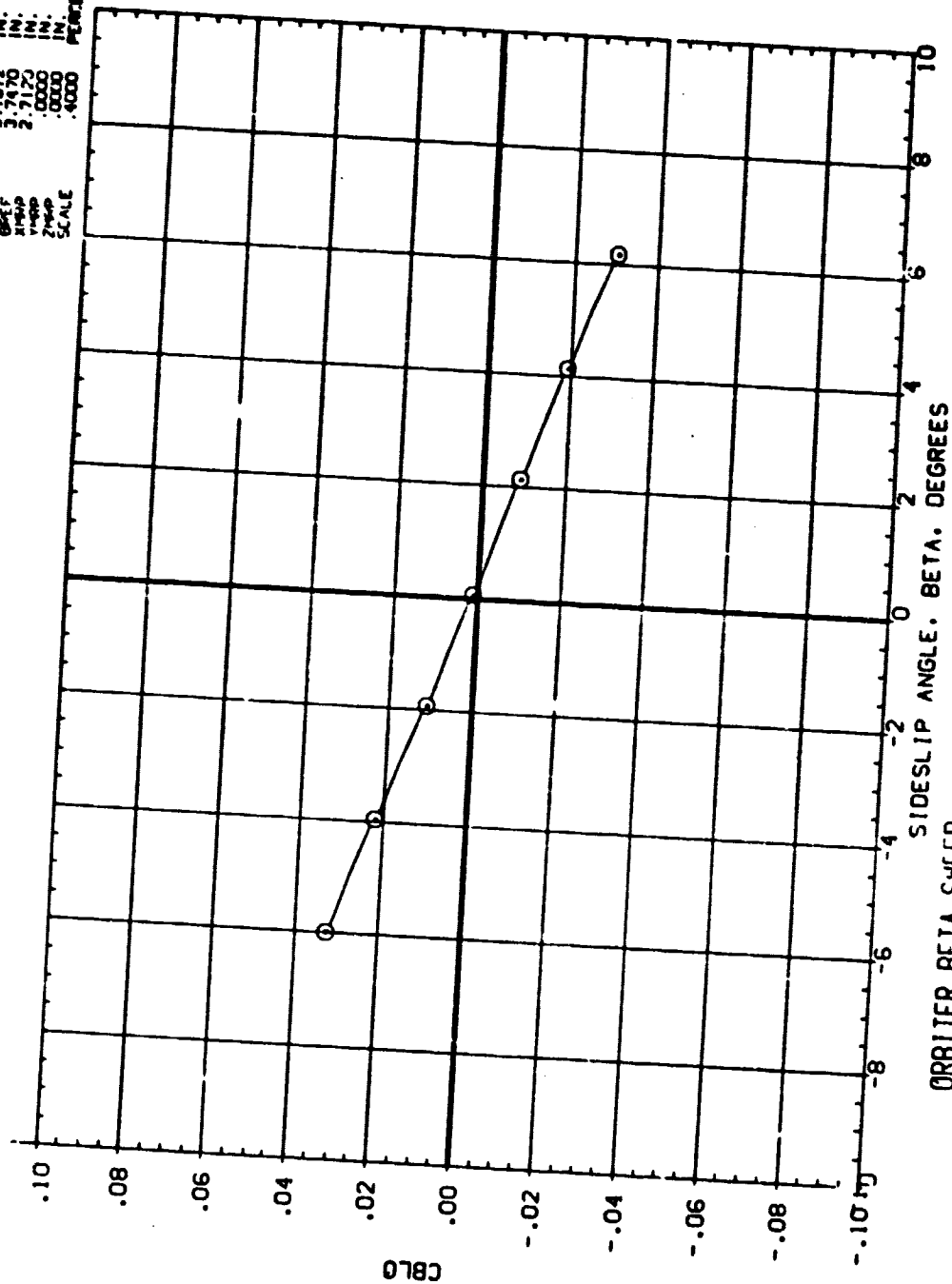


ORBITER BETA SWEEP

(C)MACH = 1.05

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2803) ○ FA28. MSFC 1VT 656. CONFIG. 02V2E2 VING GAP VAX

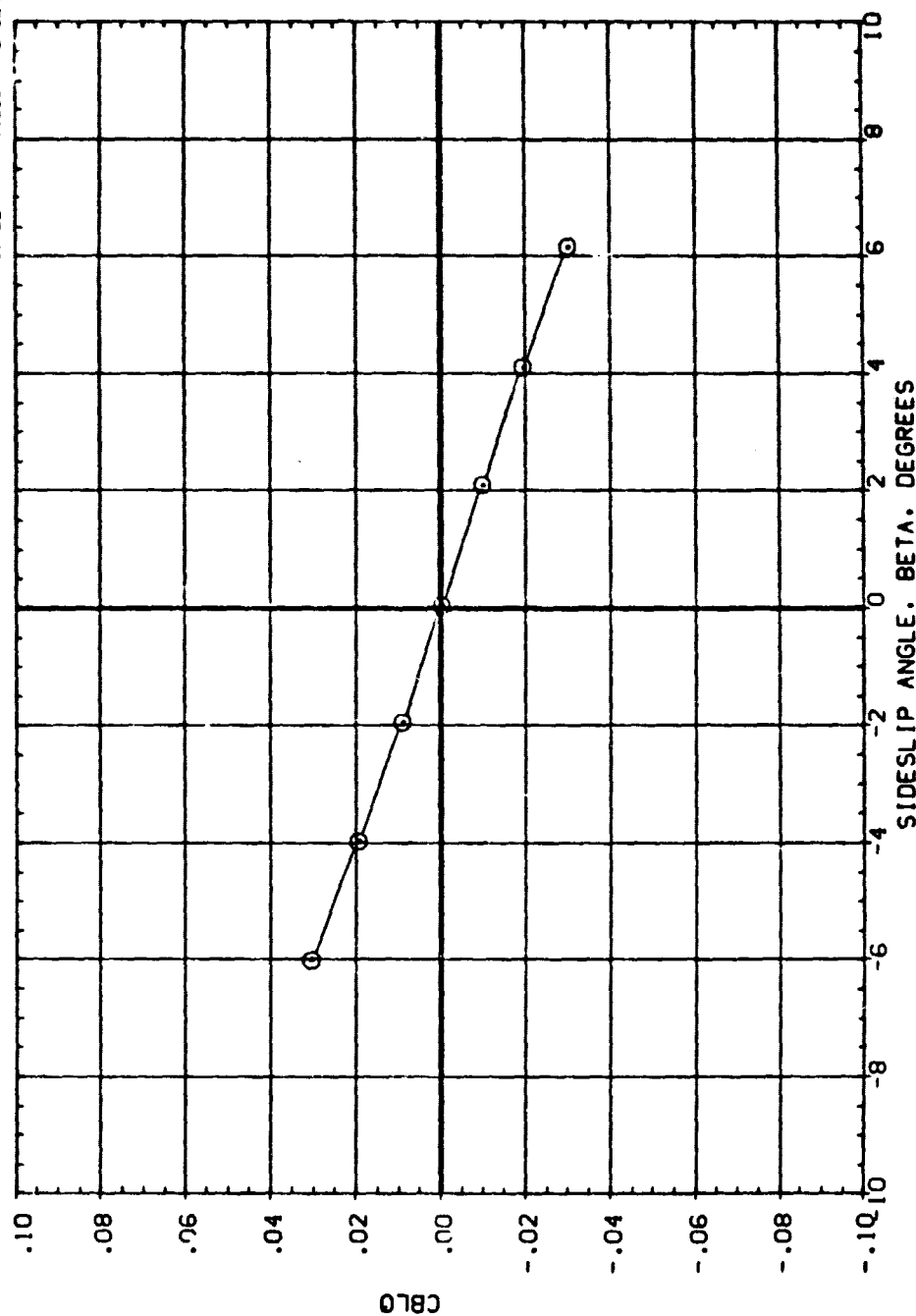
REFERENCE INFORMATION
 SREF 8.1880 SQ. IN.
 LREF 3.1612 IN.
 BREF 2.7470 IN.
 XREF 2.7170 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERIOD



ORBITER BETA SWEEP
 (O)MACH = 1.11

DATA SET SYMBOL: (FA2803) \bigcirc FA28, MSFC TVT 656, CONFIG. 02N2E2 VING GAP VAX

REFERENCE INFORMATION
 SREF 6.1980 SO. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

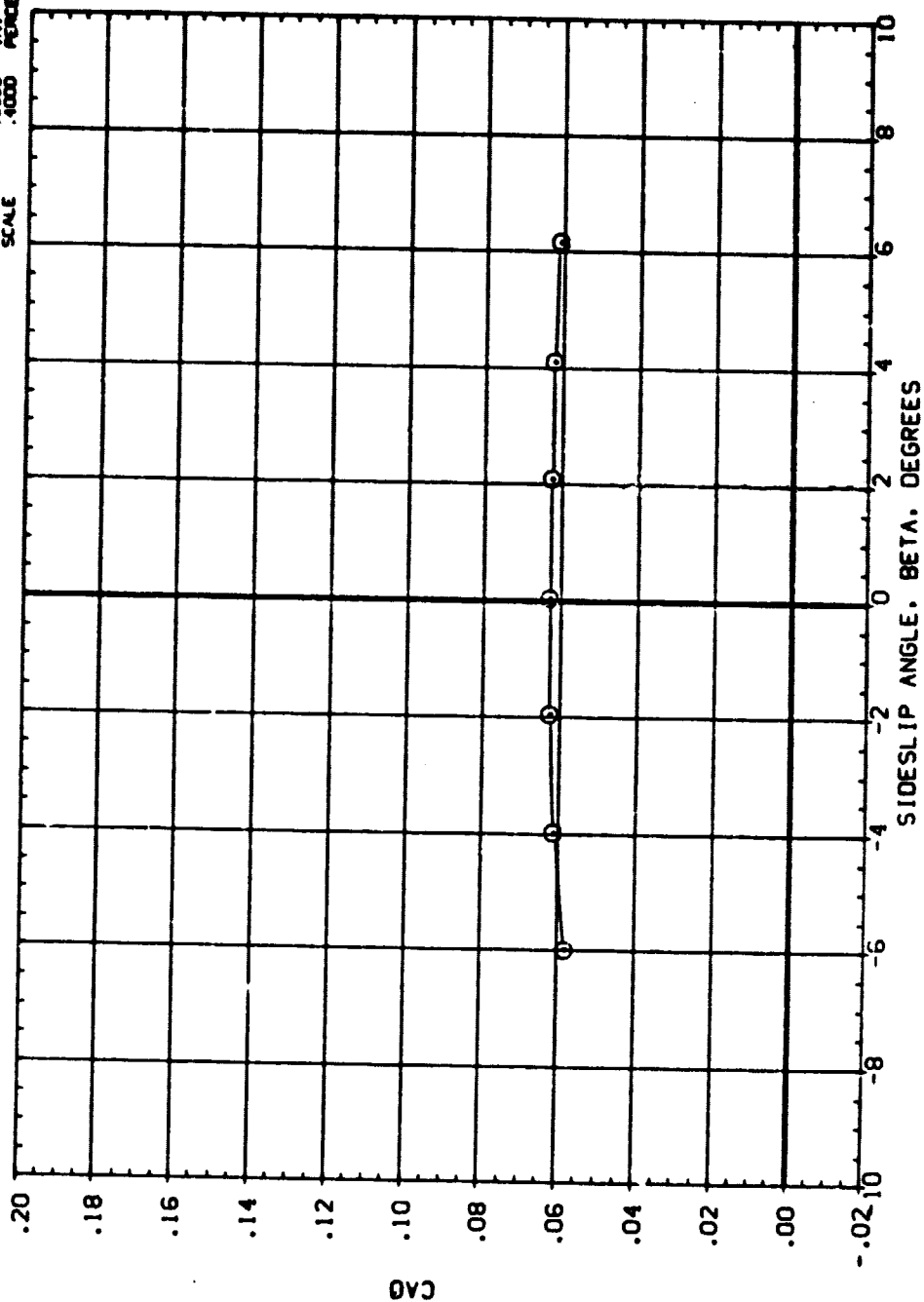


ORBITER BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(FA2603) O FA26. MSFC TWT 656. CONFIG. 02V2E2 VING GAP VAX

REFERENCE INFORMATION
REF 6.1580 50. IN.
LINE 5.1612 IN.
BREF 3.7470 IN.
APREF 2.7120 IN.
TWT 0.0000 IN.
TWT 0.0000 IN.
SCALE .4000 PERCH

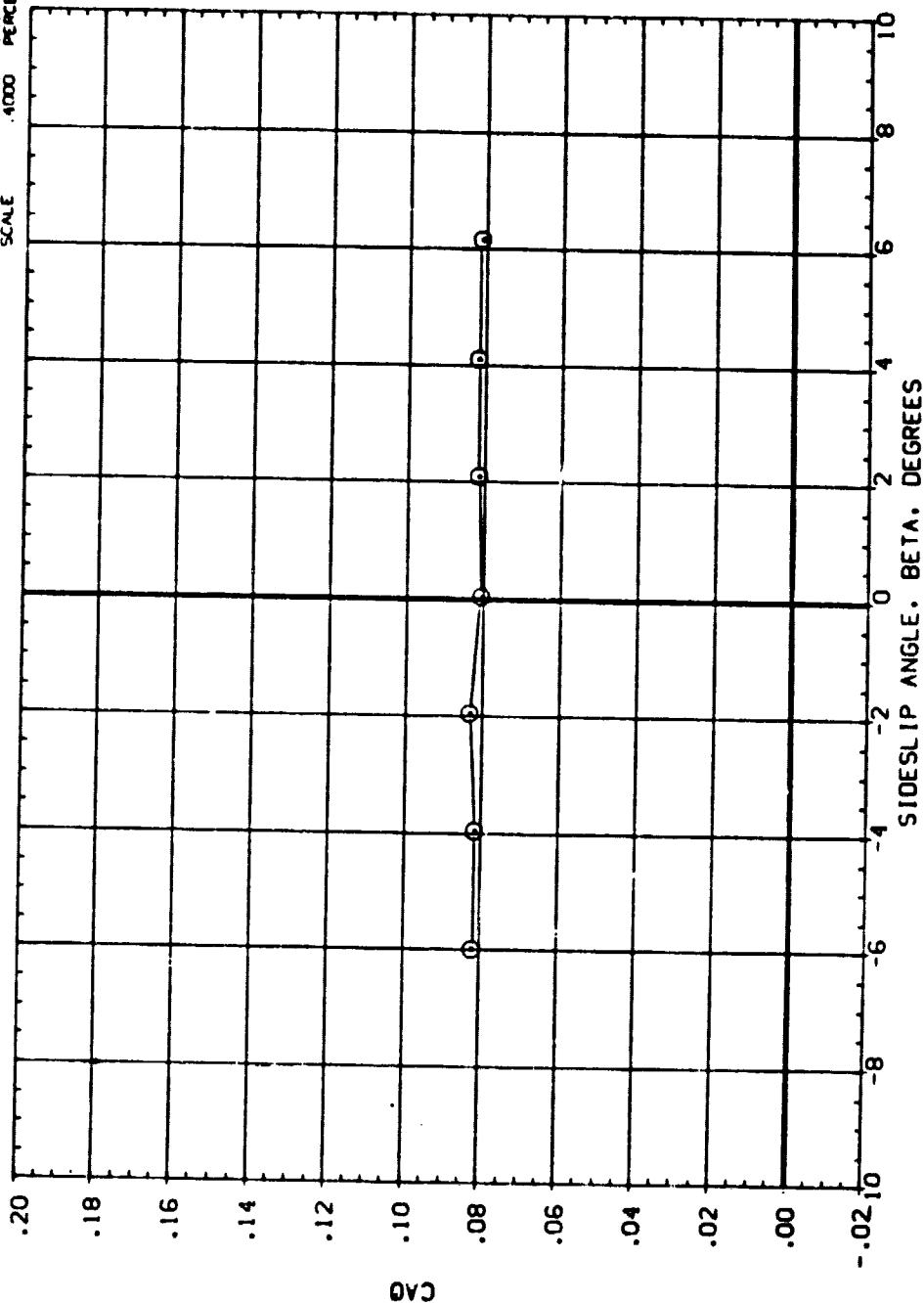


ORBITER BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2803) ○ FA28. MSFC TUT 656. CONFIG. 02V2E2 WING GAP VAX

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

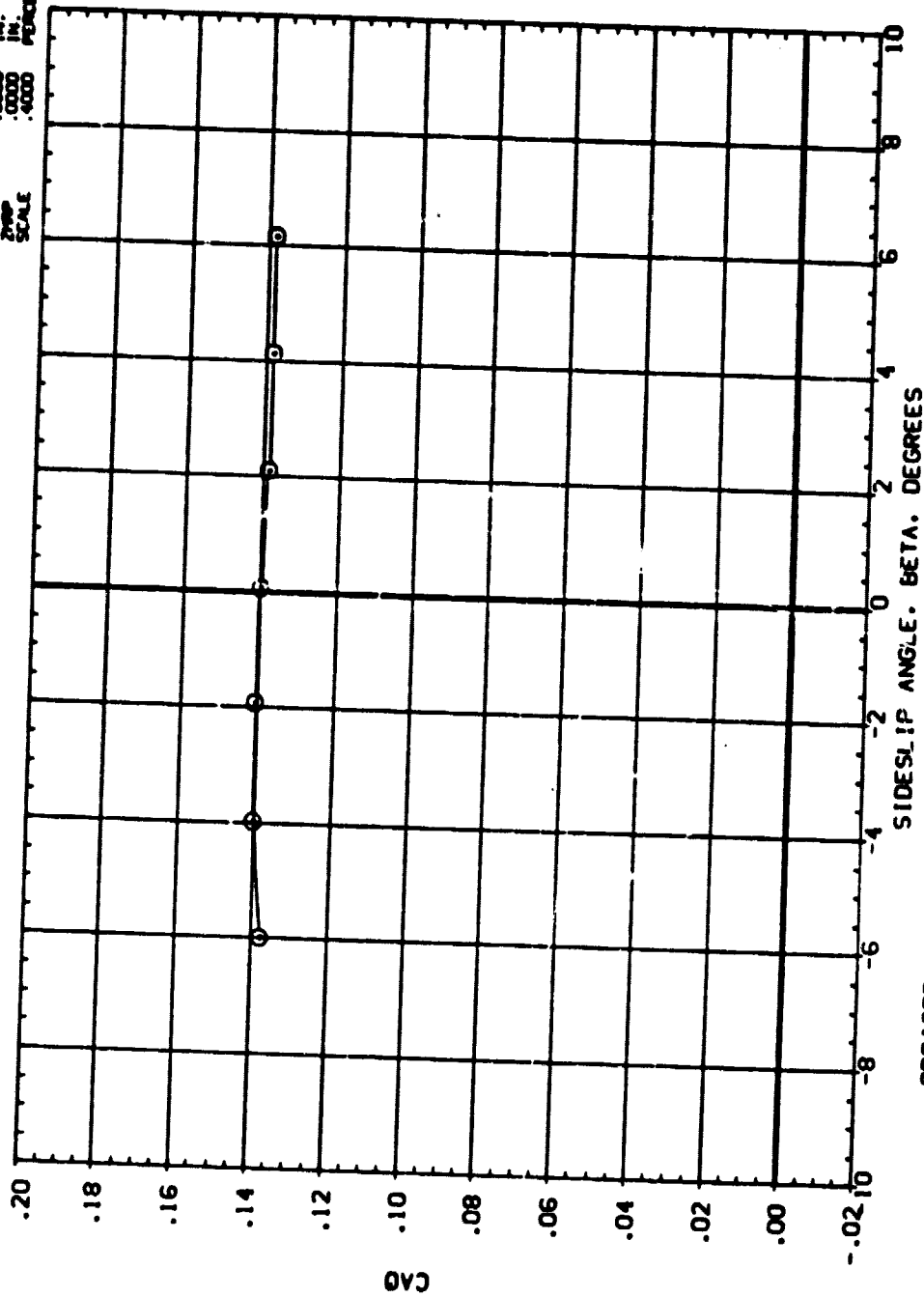


ORBITER BETA SWEEP

(B)MACH = .90

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA3003) O FA20. MSC TVT 656. CONFIG. 03V2E2 VING GAP VAL

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 MREF 3.7470 IN.
 VREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERIOD

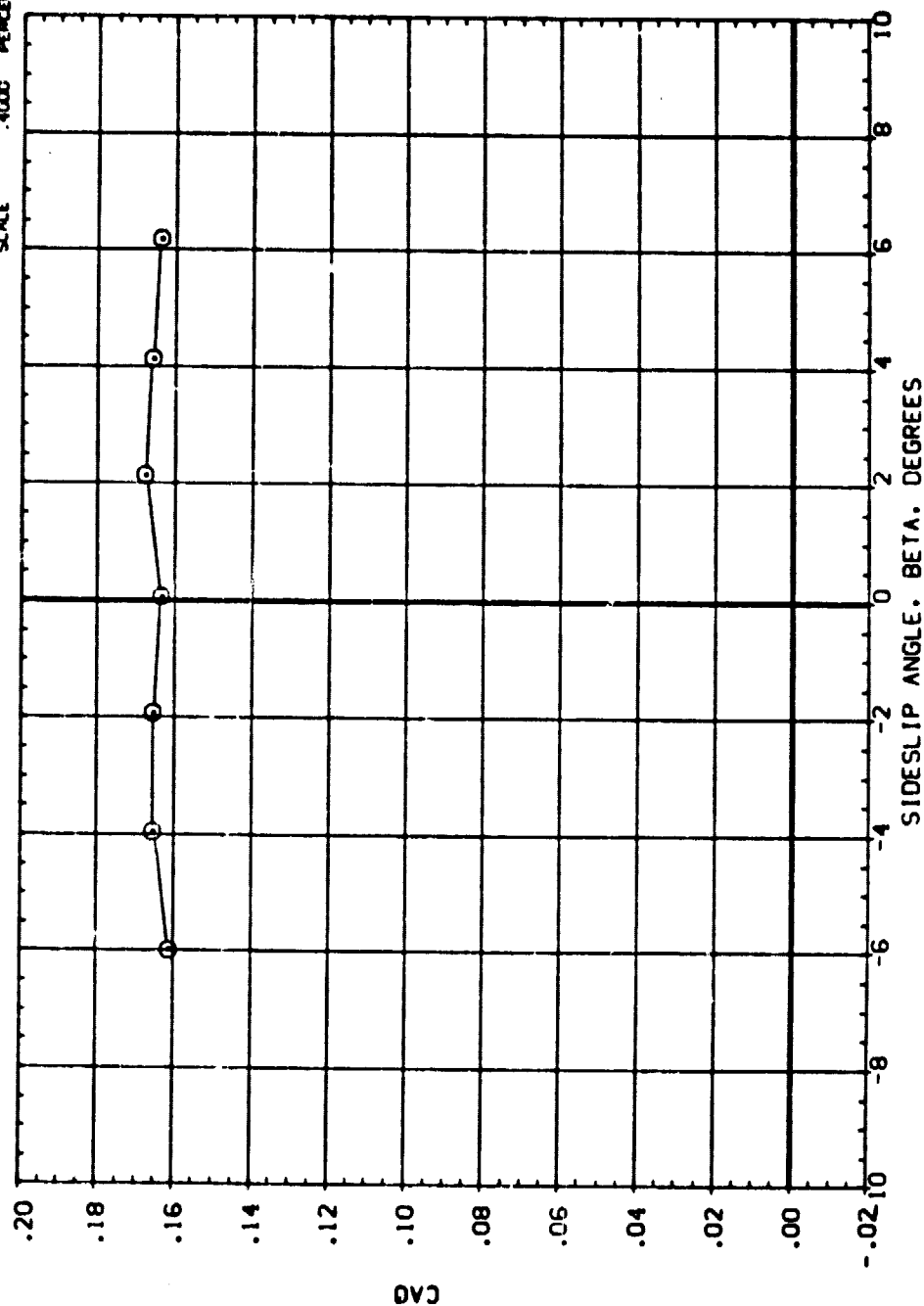


ORBITER BETA SWEEP

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2803) O FA28. MSFC TWT 526. CONFIG. 02VX22 VING GAP VAX

REFERENCE INFORMATION
 SREF 5.1580 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7476 IN.
 YHOP 2.7120 IN.
 ZHOP .0000 IN.
 SCALE .4000 PERCENT

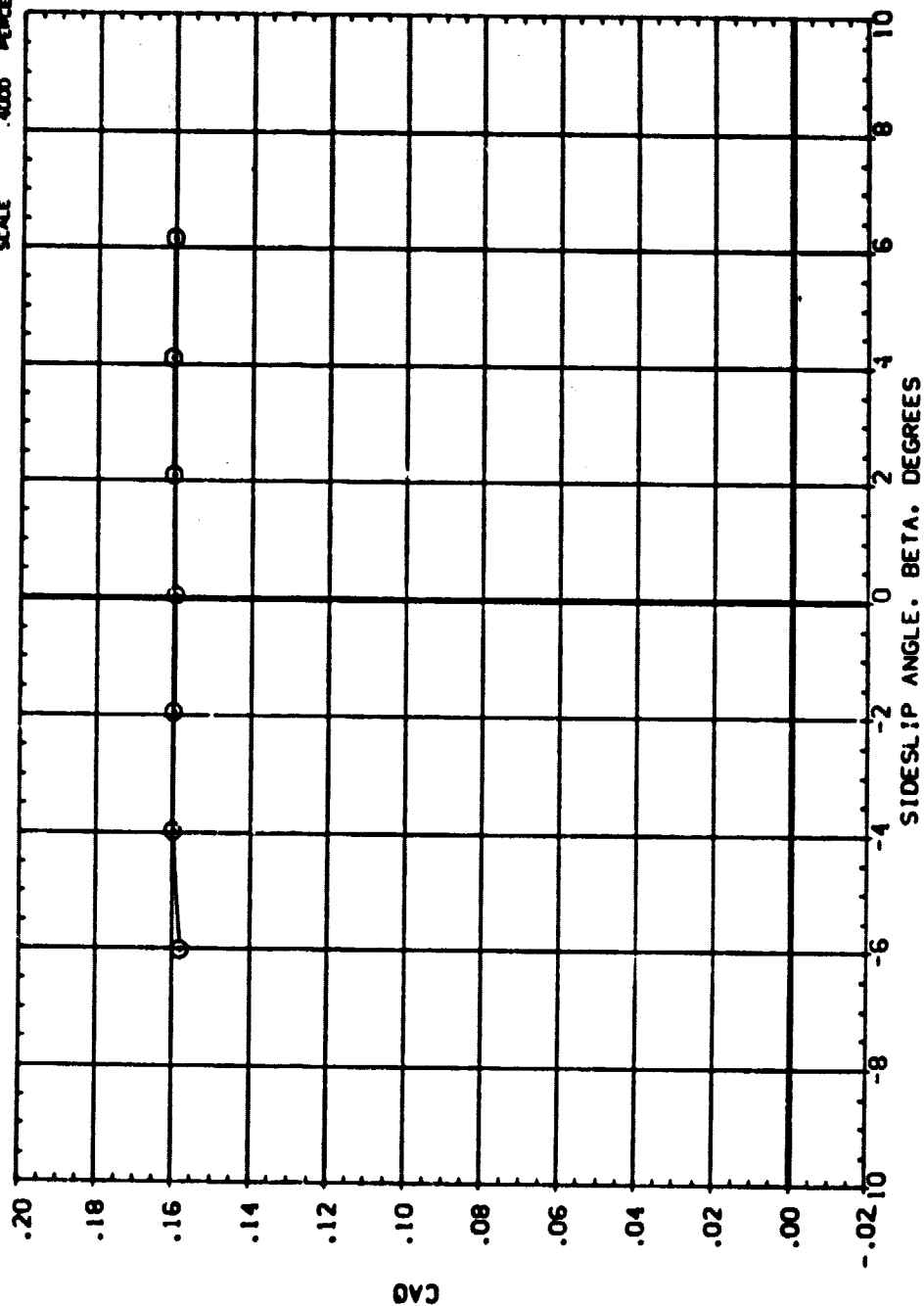


ORBITER BETA SWEEP

(D)MACH = 1.11

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2003) O FA20, MSC TVT 636, CDS-16, CDS-22 VING GAP VAX

REFERENCE INFORMATION
 SET 6.1500 20 IN
 LAT 5.1612 10 IN
 LONG 2.7470 10 IN
 Y-PRP 2.7120 10 IN
 Z-PRP .0000 10 IN
 SCALE .4000 PERCENT

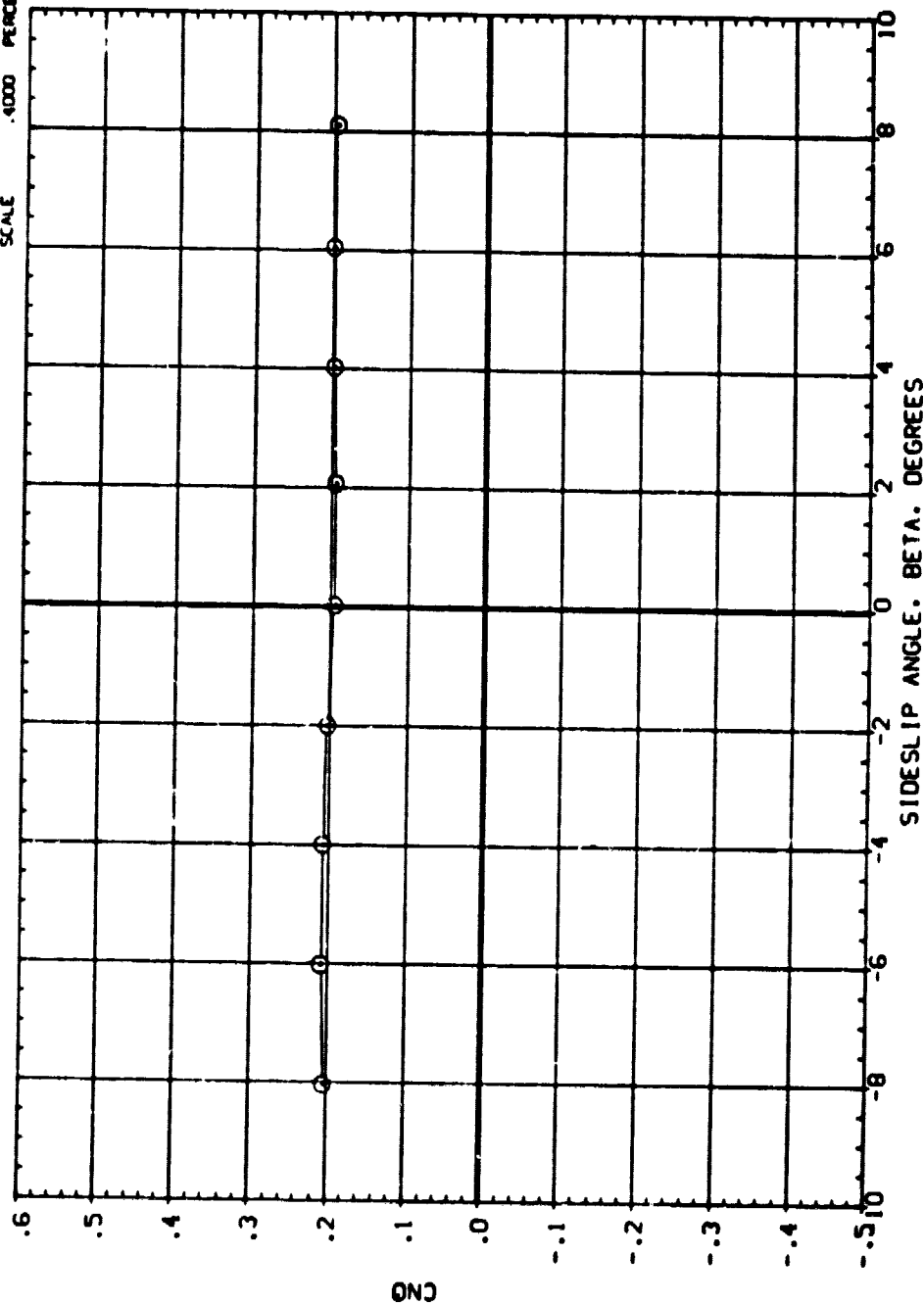


ORBITER BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28. MSFC TWT 5'S. CONFIG. 02VZCZ06AAAT7353
 (FA2805) (FA2807) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1512 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

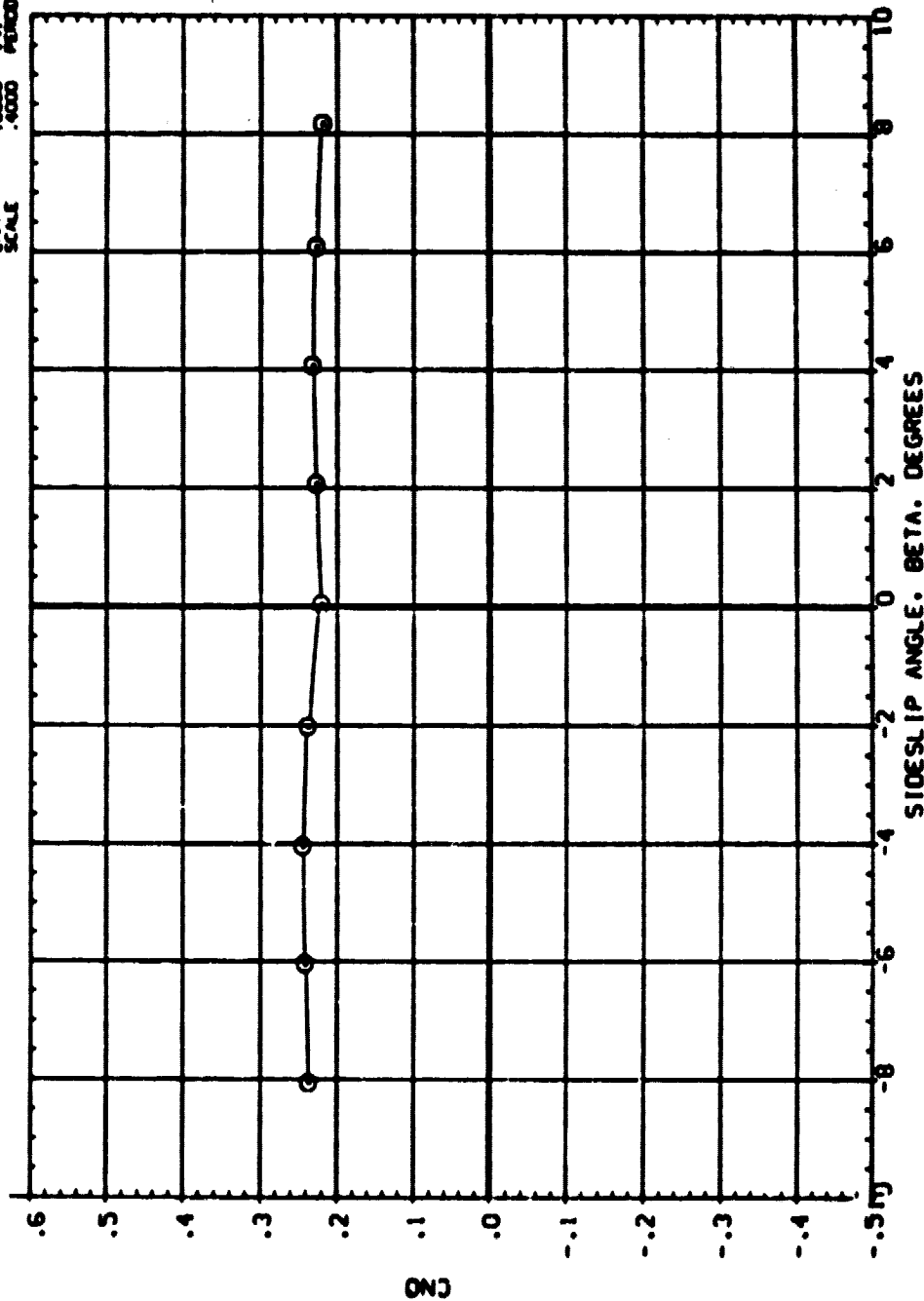


LAUNCH VEHICLE BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FAZES: 1 FAZES: 2
 PART. MPT. TWT BSE. CONF. 16. CONF. 20. MATTERS: 33
 DATA NOT AVAILABLE

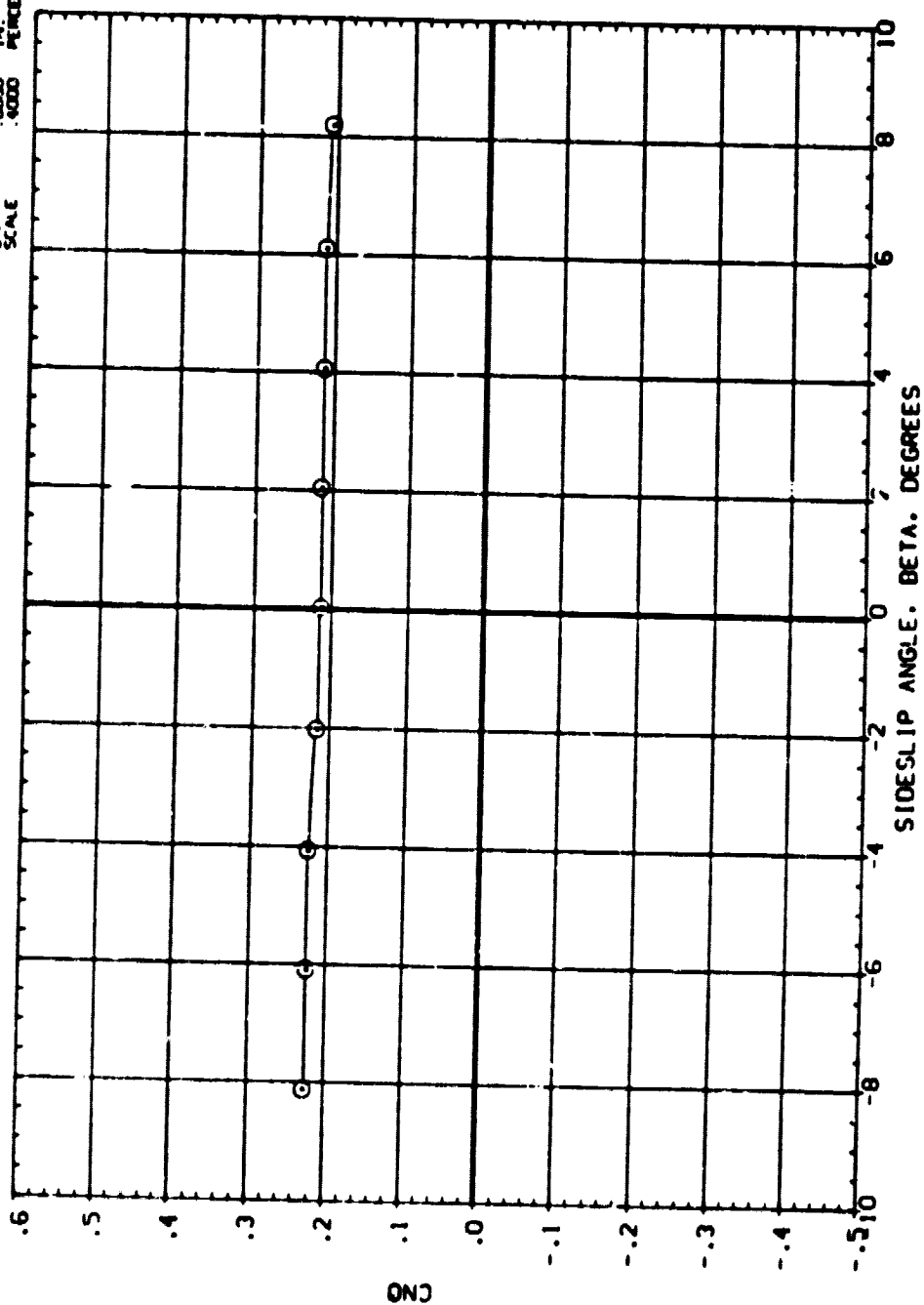
REFERENCE INFORMATION
 SET: 8-1280 80 IN
 UNIT: 8-1812 80 IN
 BSE: 3-2470 80 IN
 TWT: 2-2120 80 IN
 MATTERS: 33 80 IN
 CONF. 16. 80 IN
 CONF. 20. 80 IN
 SCALE: .0000 PERIOD



(B)MACH = .50

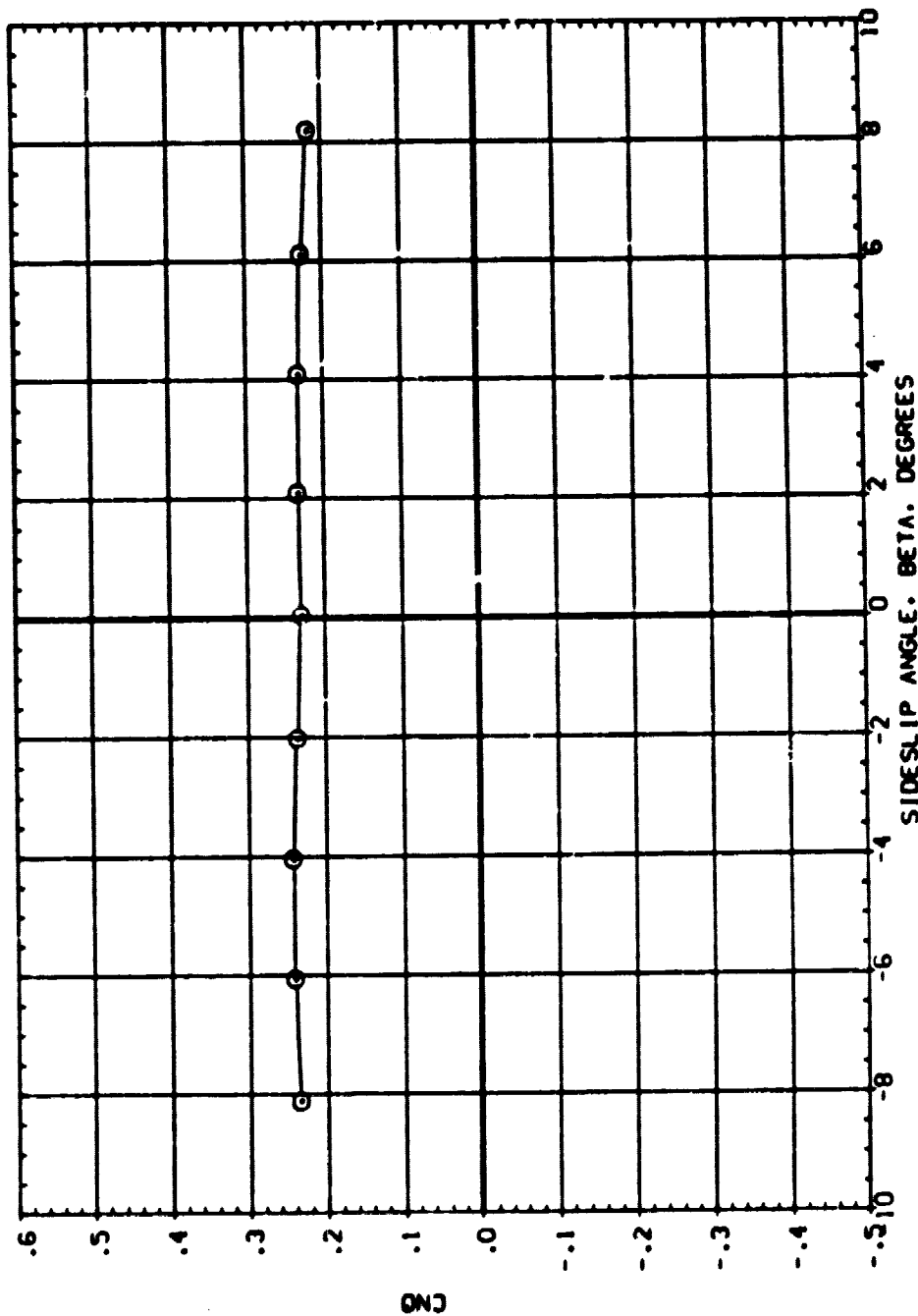
DATA SET SPEEDL CONFIGURATION DESCRIPTION
 (PANDS) PA20. MSC TWT 656. CONFIG. CONVEZDAAWATT353
 (PA2007) ☐ DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 XREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT



LAUNCH VEHICLE BETA SWEEP

(C)MACH = 1.05

[illegible]

LAUNCH VEHICLE BETA SWEEP

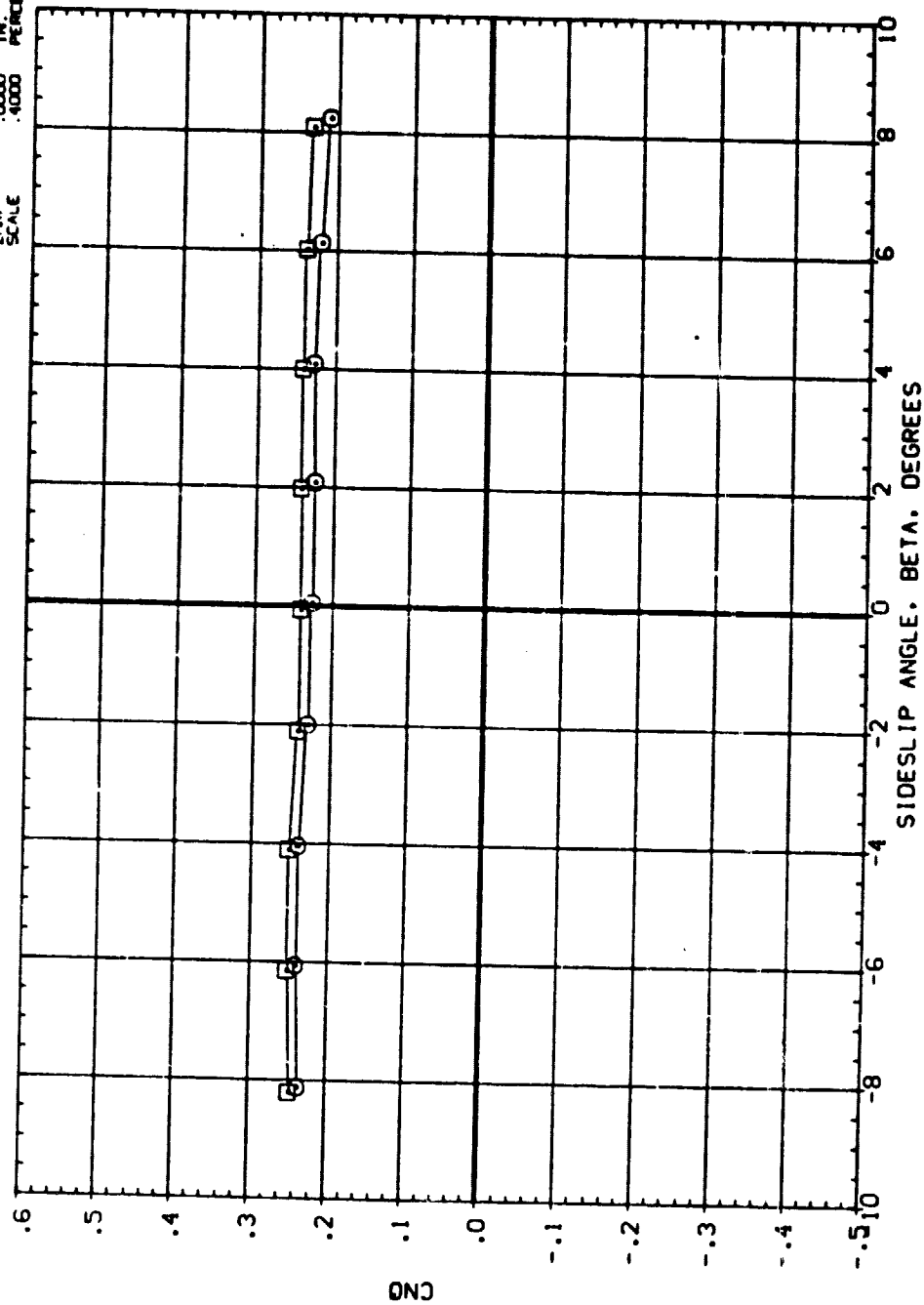
(D)MACH = .10

DATA SET SYMBOL: ☐ (FA2805) ☐ (FA2807)

CONFIGURATION DESCRIPTION: FA28: MSFC TWT 656: CONF IG: 02V2E20WAA11753
FA28: MSFC TWT 656: CONF IG: 02V2E20WAA11753

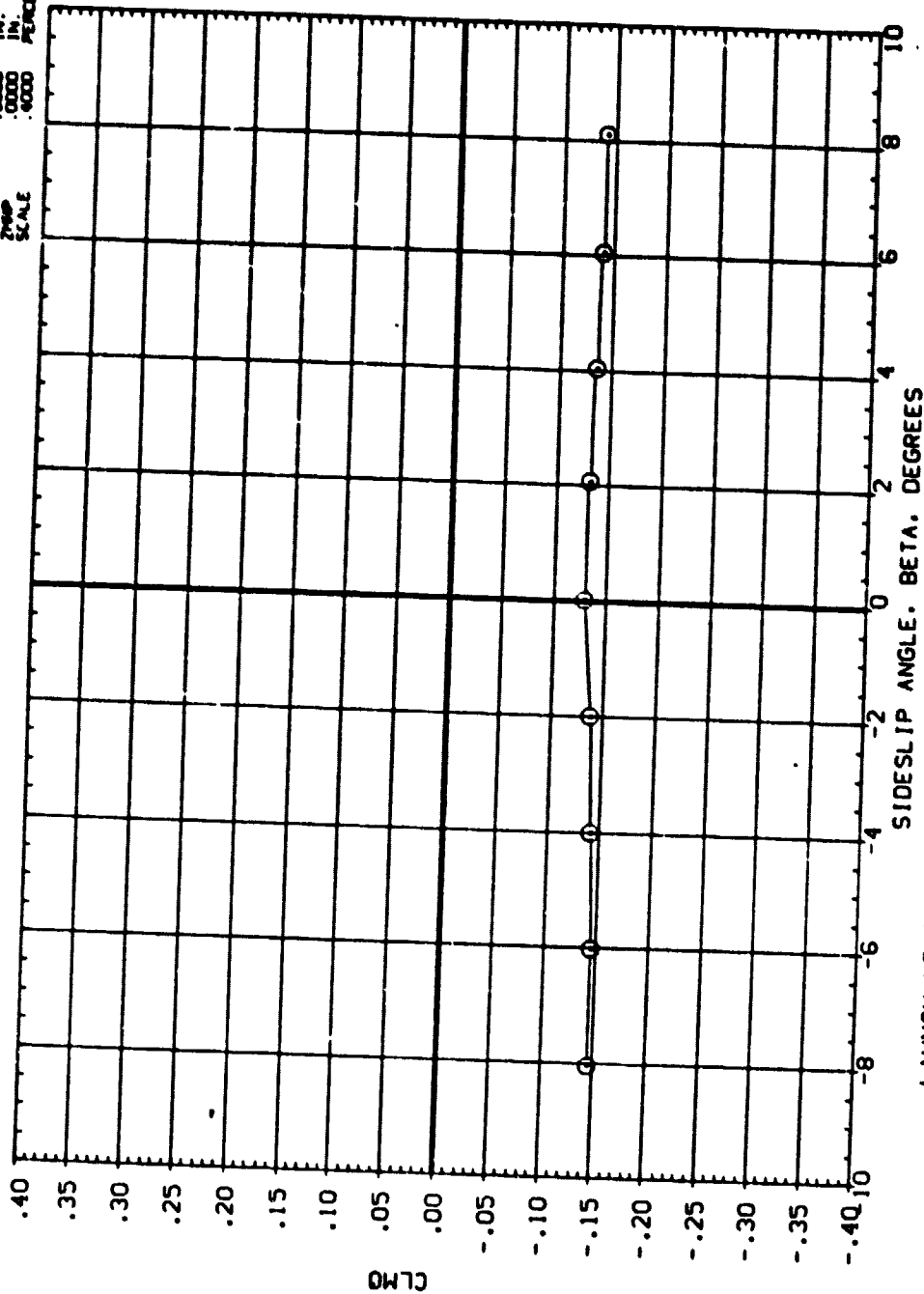
REFERENCE INFORMATION

SREF	6.1980	IN.
LREF	5.1612	IN.
BREF	3.7470	IN.
XPRP	2.7120	IN.
YPRP	.0000	IN.
ZPRP	.0000	IN.
SCALE	.4000	PERCENT



DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28, MSC TWT 656, CONFIG. 02V32MWAATT353
 DATA NOT AVAILABLE

REFERENCE INFORMATION
 REF 8.1800 50. IN.
 LREF 3.1612 IN.
 GREF 2.1470 IN.
 VREF 2.1470 IN.
 WREF 0.0000 IN.
 ZREF 0.0000 IN.
 SCALE 4000 PERCENT

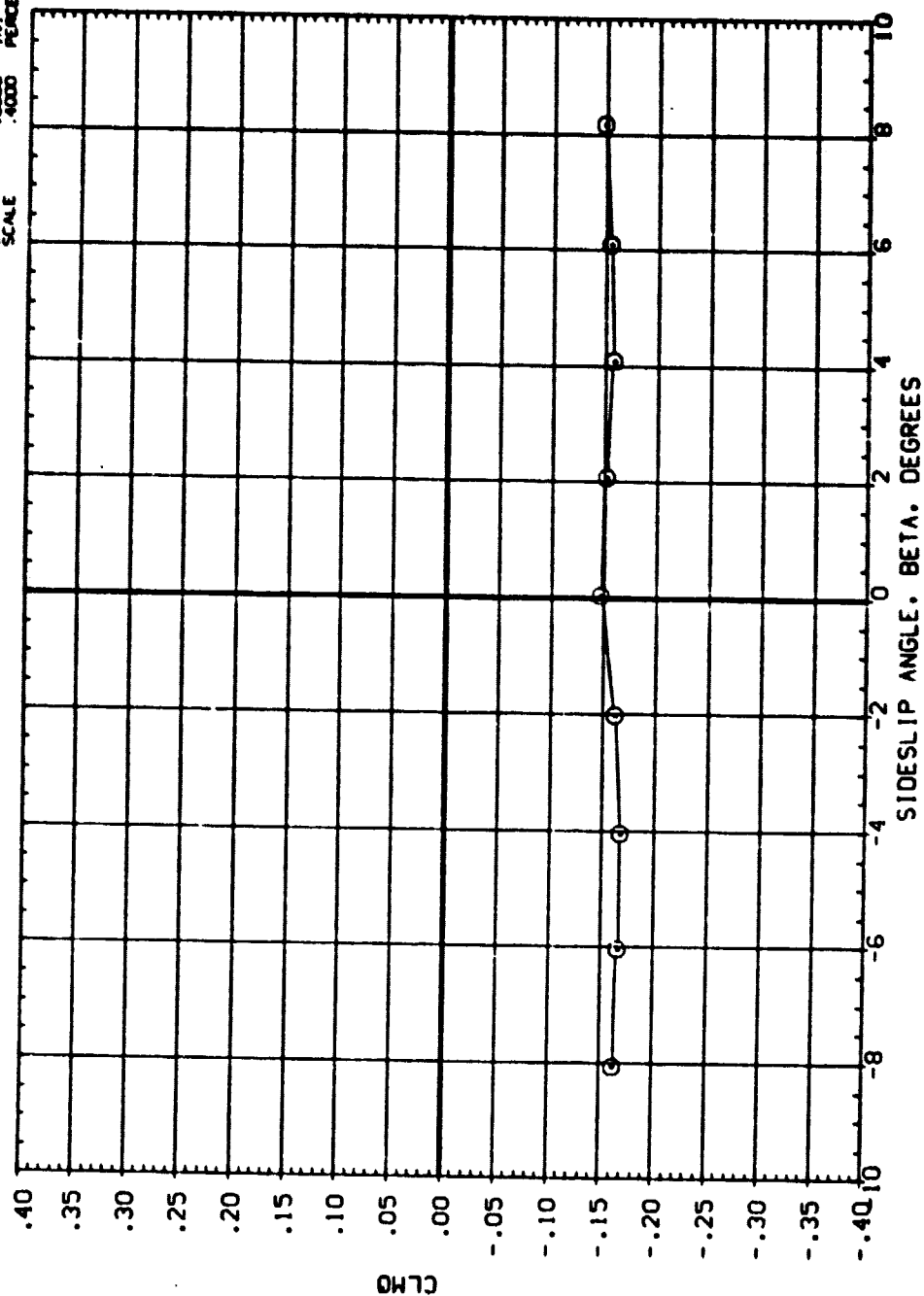


LAUNCH VEHICLE BETA SWEEP

(MACH = .60)

DATA SET SYMBOL: 0
 CONFIGURATION DESCRIPTION: FA28, HEFC, TVT 636, CONFIG. 020J22MMAATT353
 (FA2805) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 5.1580 IN
 LREF 5.1512 IN
 BREF 3.7470 IN
 YPROP 2.7120 IN
 ZPROP .0000 IN
 SCALE .4000 PERCENT

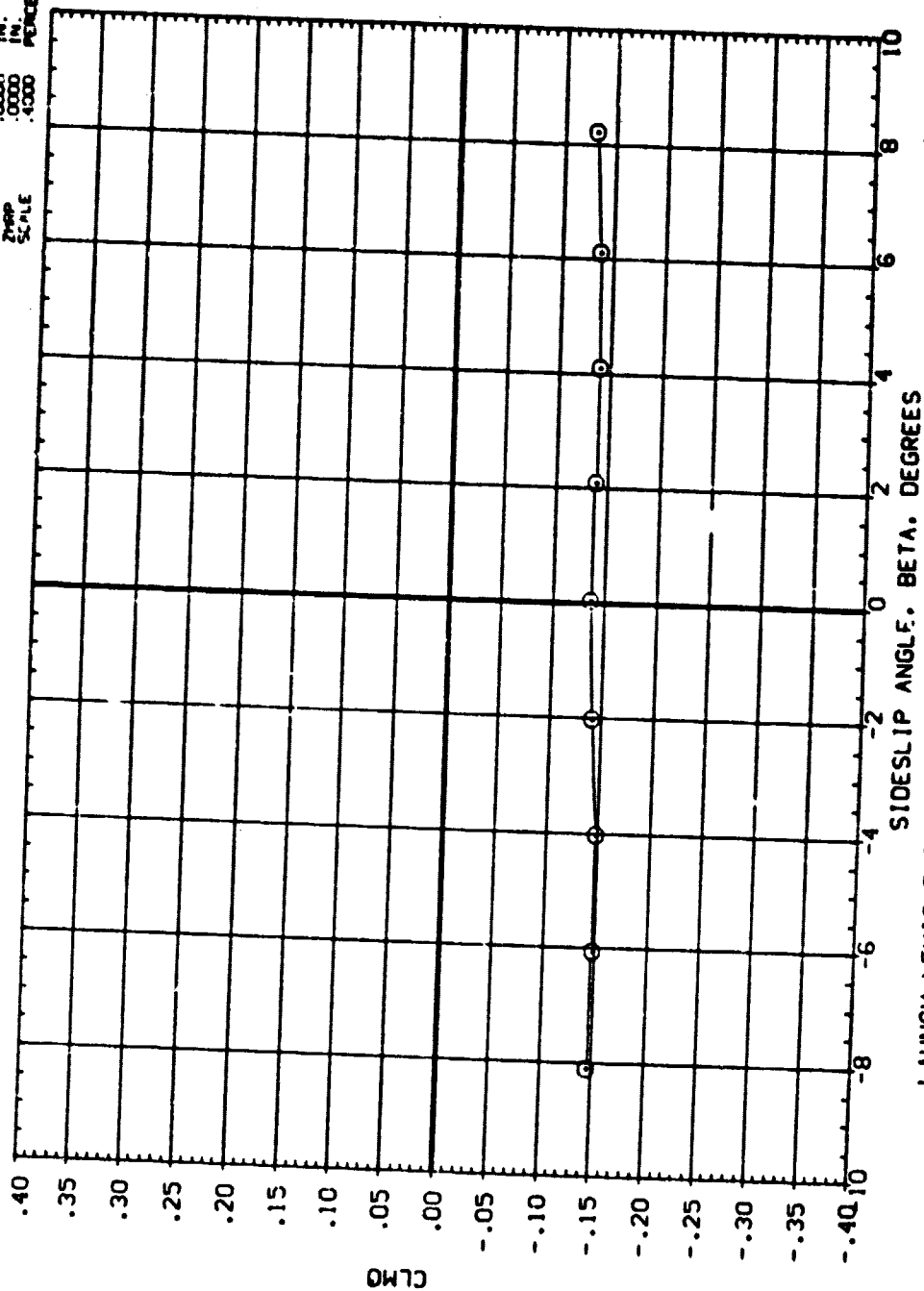


LAUNCH VEHICLE BETA SWEEP

(B)MACH = .90

DATA SET SYMBOL: 8
 (FA2805)
 (FA2837)
 CONFIGURATION DESCRIPTION:
 FA28. WSC TVT 656. CONFIG. 02VZ20WAA17353
 DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



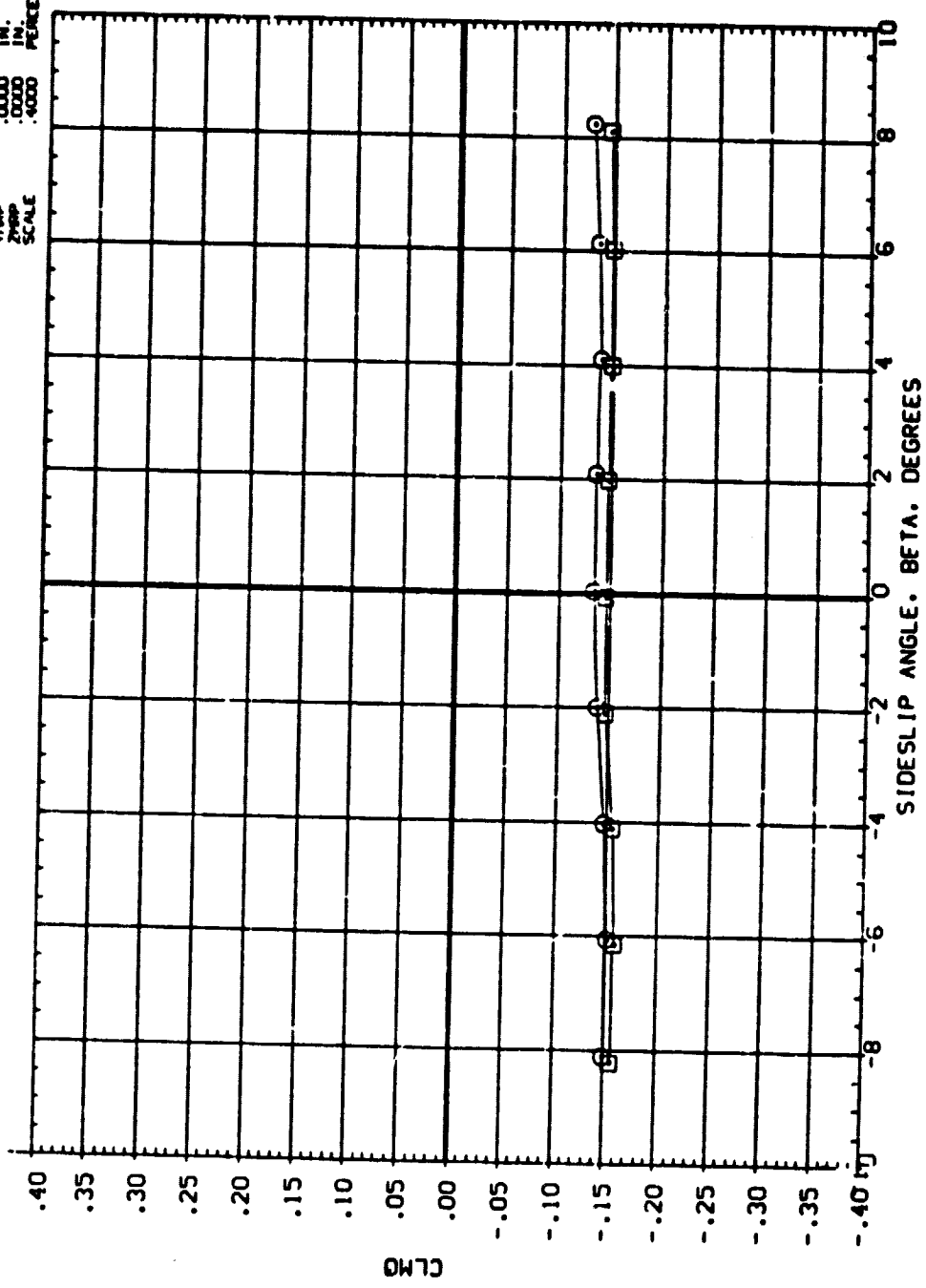
LAUNCH VEHICLE BETA SWEEP

(O)MACH = 1.10

DATA SET SYMBOL: 8
 (FA2005)
 (FA2007)

CONFIGURATION DESCRIPTION
 FA20. MSFC TWT 656. CONF 10. 02VZ20WAA1T253
 FA20. MSFC TWT 656. CONF 10. 02VZ20WAA1T253

REFERENCE INFORMATION
 SREF 5.1800 50. IN
 LREF 3.1812 IN.
 BREF 2.7470 IN.
 VPROP 2.7120 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

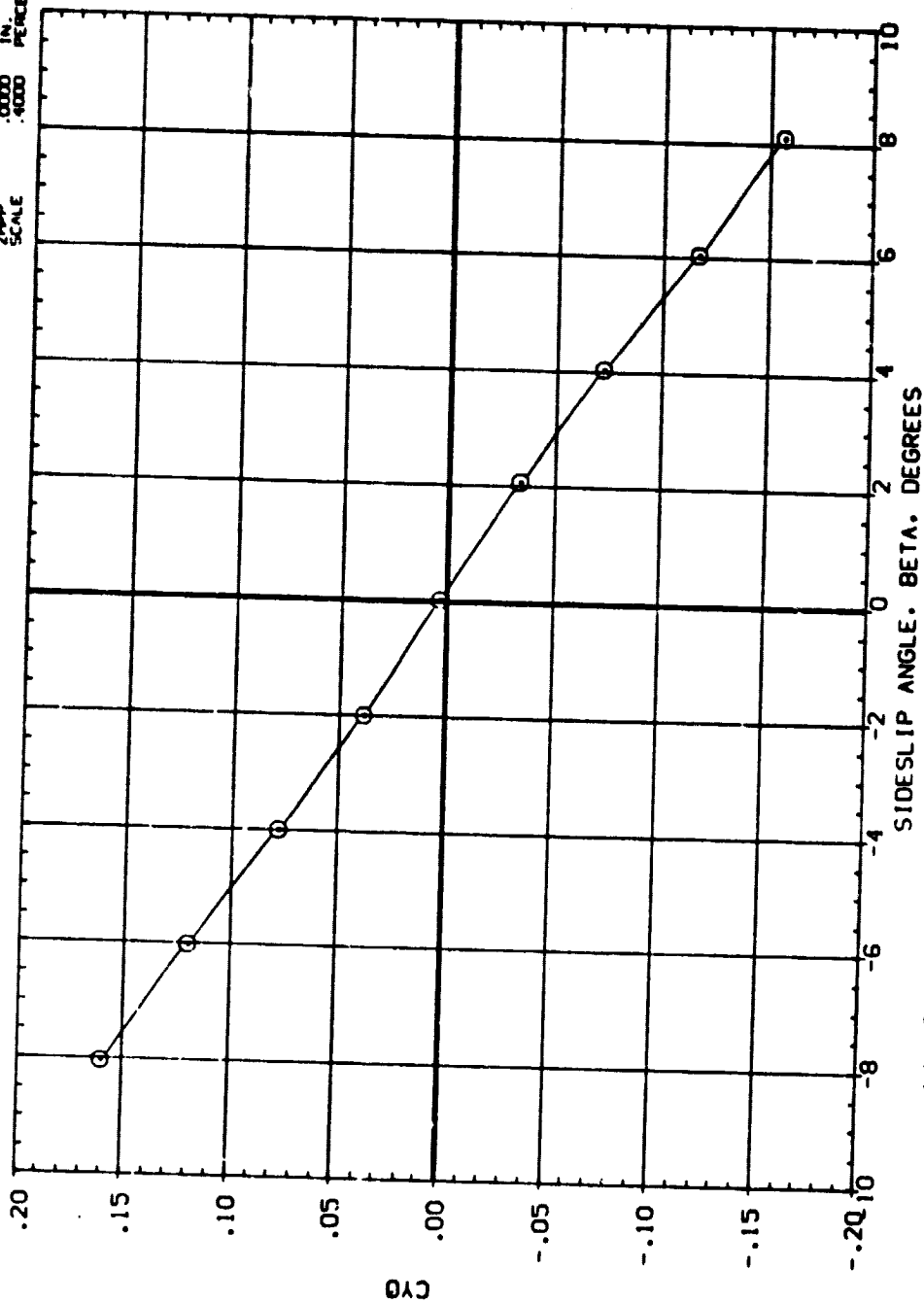


LAUNCH VEHICLE BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL: B
 (FA2805) (FA2807)
 CONFIGURATION DESCRIPTION: FA28. MSFC TVT 656. CONFIG. 02VZCZMMAATT353
 DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

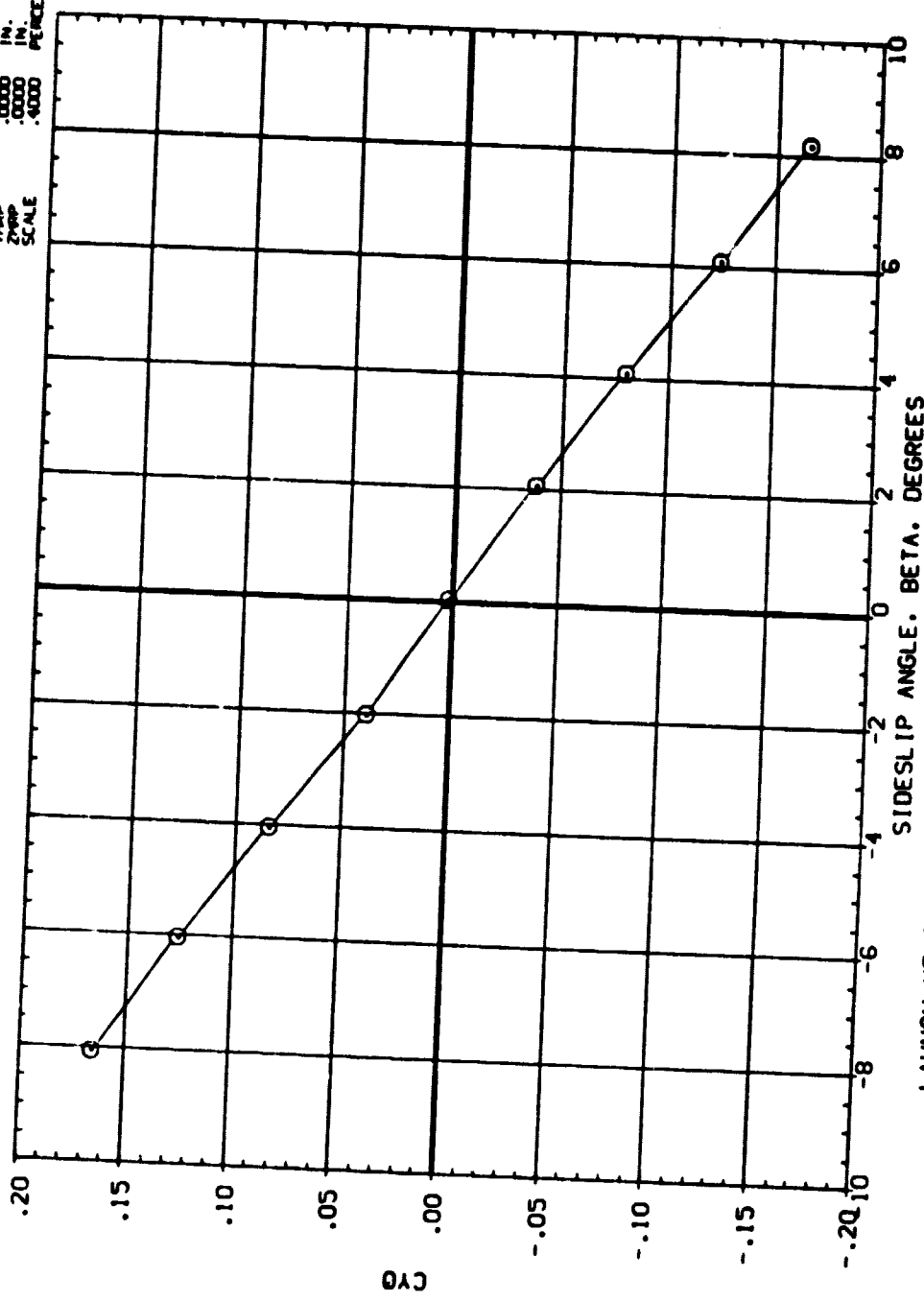


LAUNCH VEHICLE BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL: FA28061
 CONFIGURATION DESCRIPTION: FA28061
 FA28061 TVT 656, CONFIG. 0202E200MA11353
 DATA NOT AVAILABLE

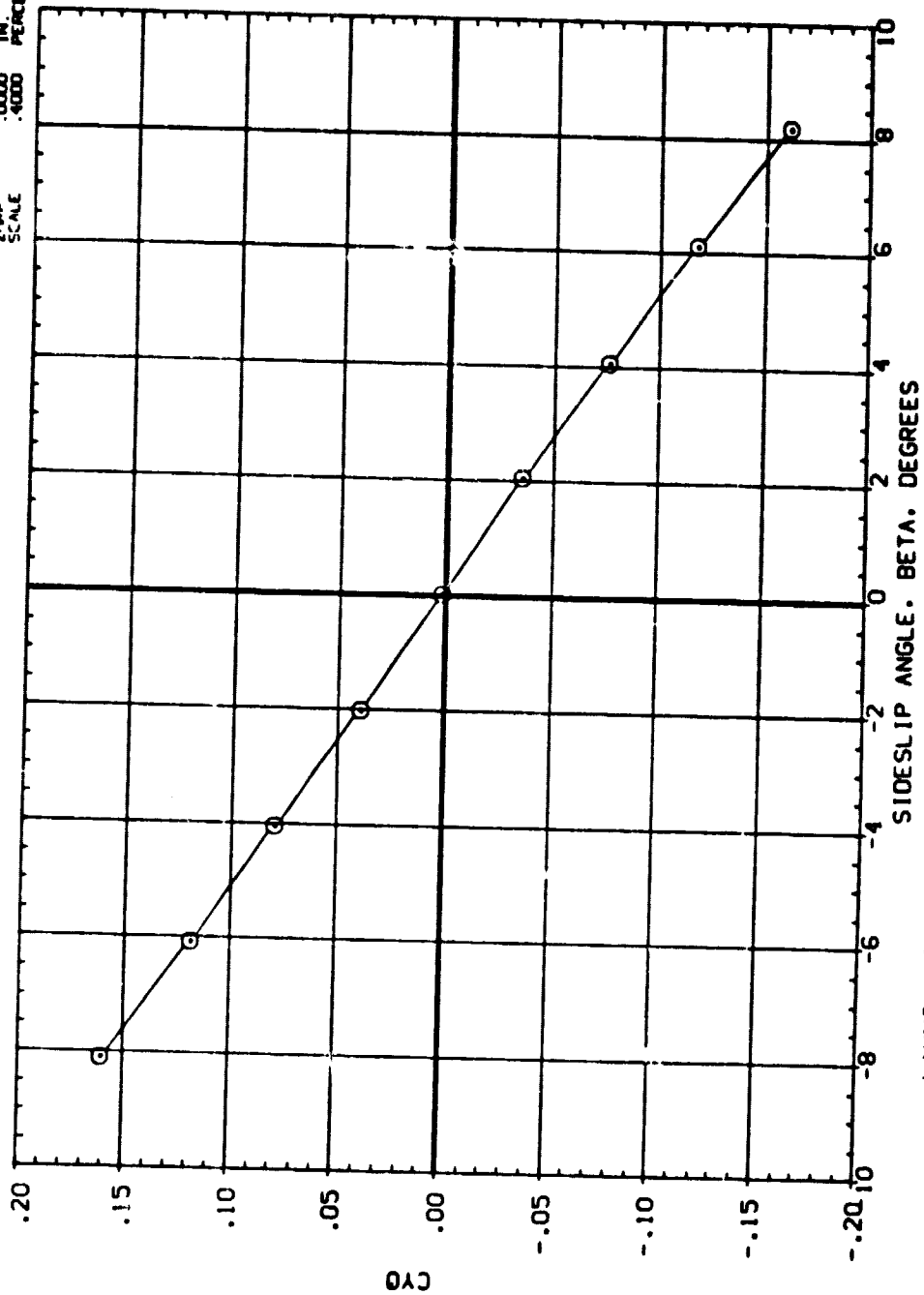
REFERENCE INFORMATION
 SNET 6.1280 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



LAUNCH VEHICLE BETA SWEEP
 (B)MACH = .90

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28, MSFC TWT 656, CONFIG. 02V2E20WAA1T353
 (FA2805) (FA2807) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

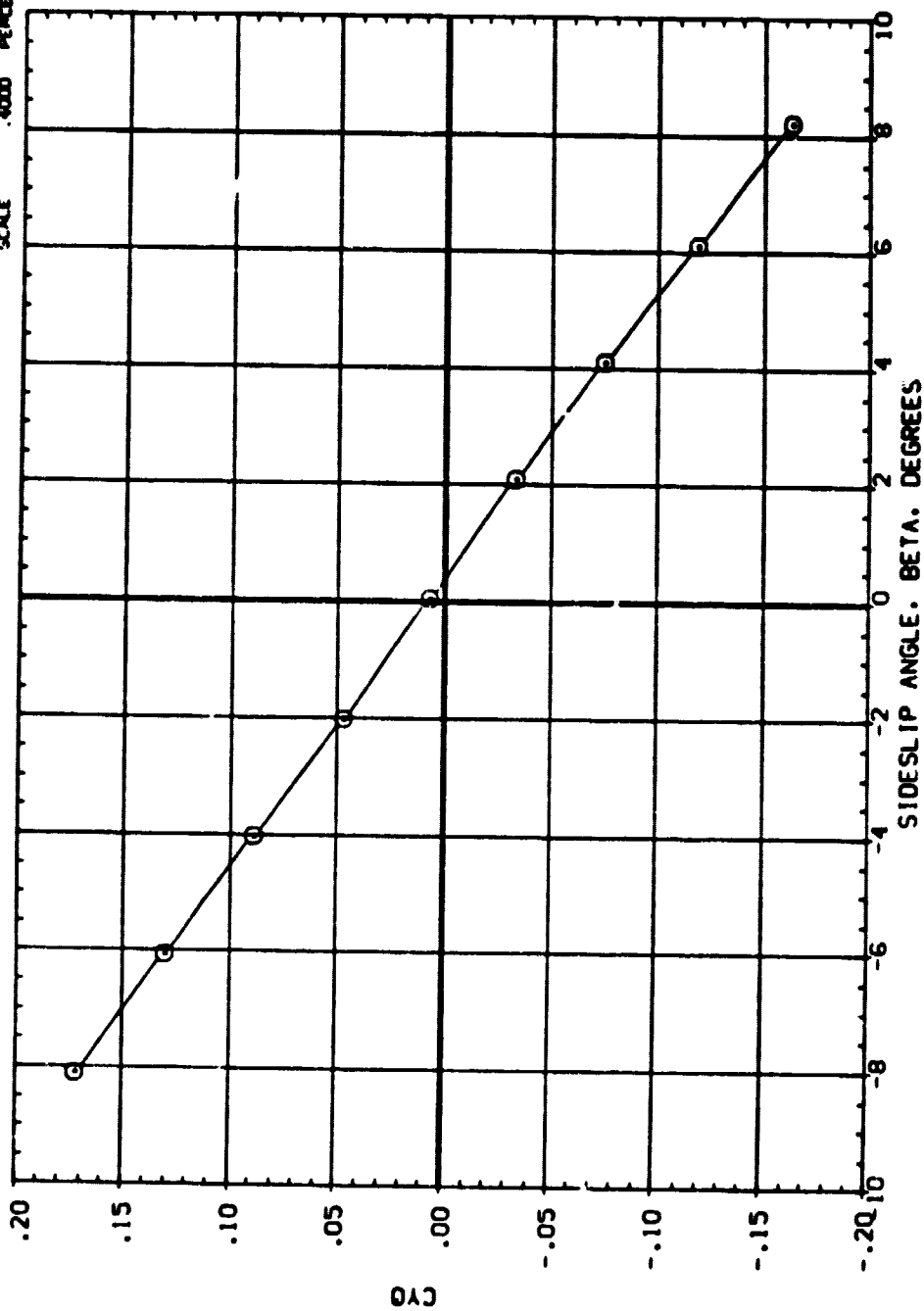


LAUNCH VEHICLE BETA SWEEP

(C)MACH = 1.05

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2005) 8 FA2005 TWT 656. CONFIG. 00V2E2000AA11253
 (FA2607) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 8.1980 IN.
 LREF 3.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

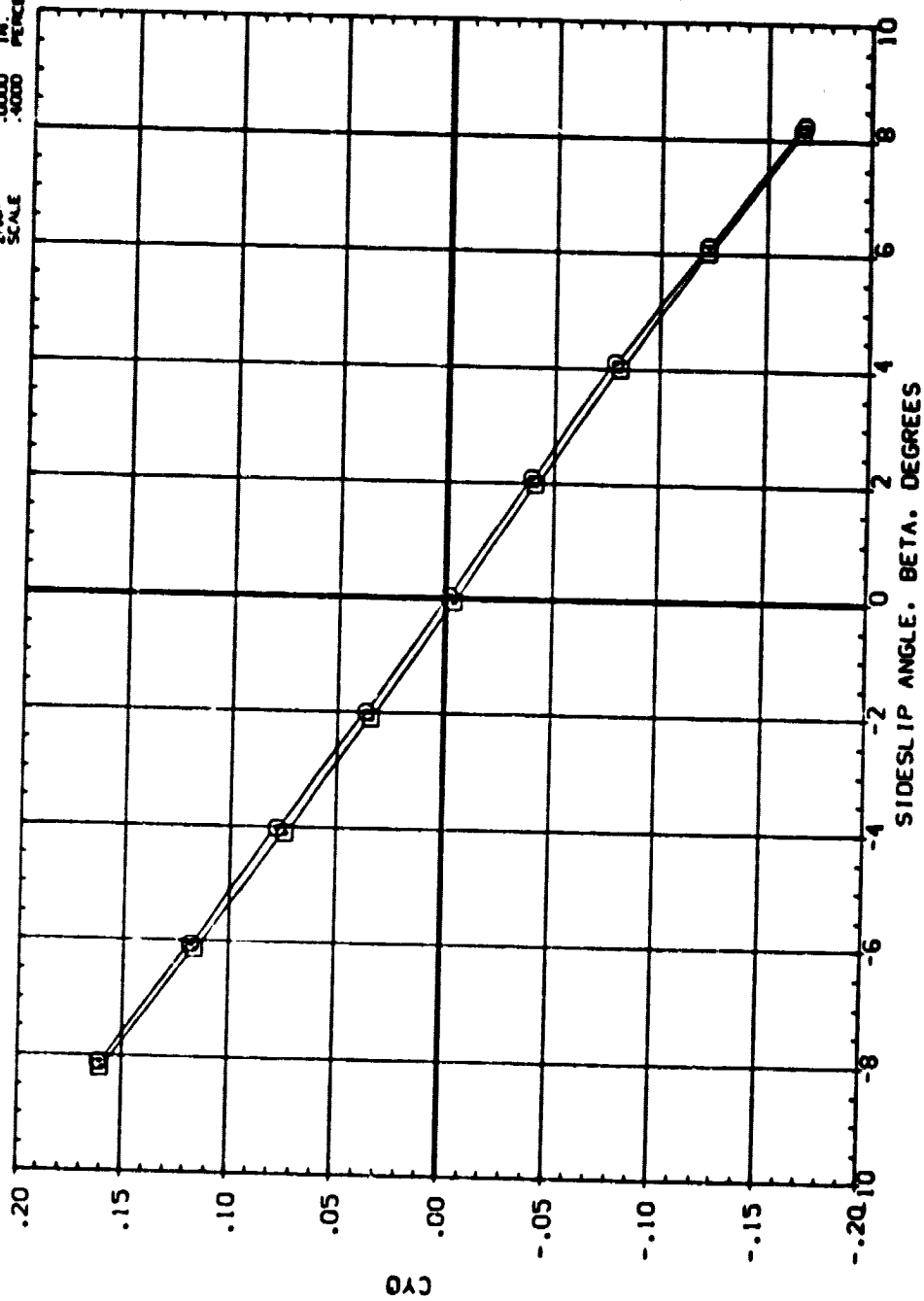


LAUNCH VEHICLE BETA SWEEP

(C)MACH = 1.10

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (FA2805) □ FA28. MSFC 141 656. CONF IG. 03V2E200MA11353
 (FA2807) □ FA28. MSFC 141 656. CONF IG. 03V2E200MA11353

REFERENCE INFORMATION
 SREF 5.1580 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 ZREF 2.7120 IN.
 YREF .0000 IN.
 XREF .0000 IN.
 SCALE .4000 PERCENT

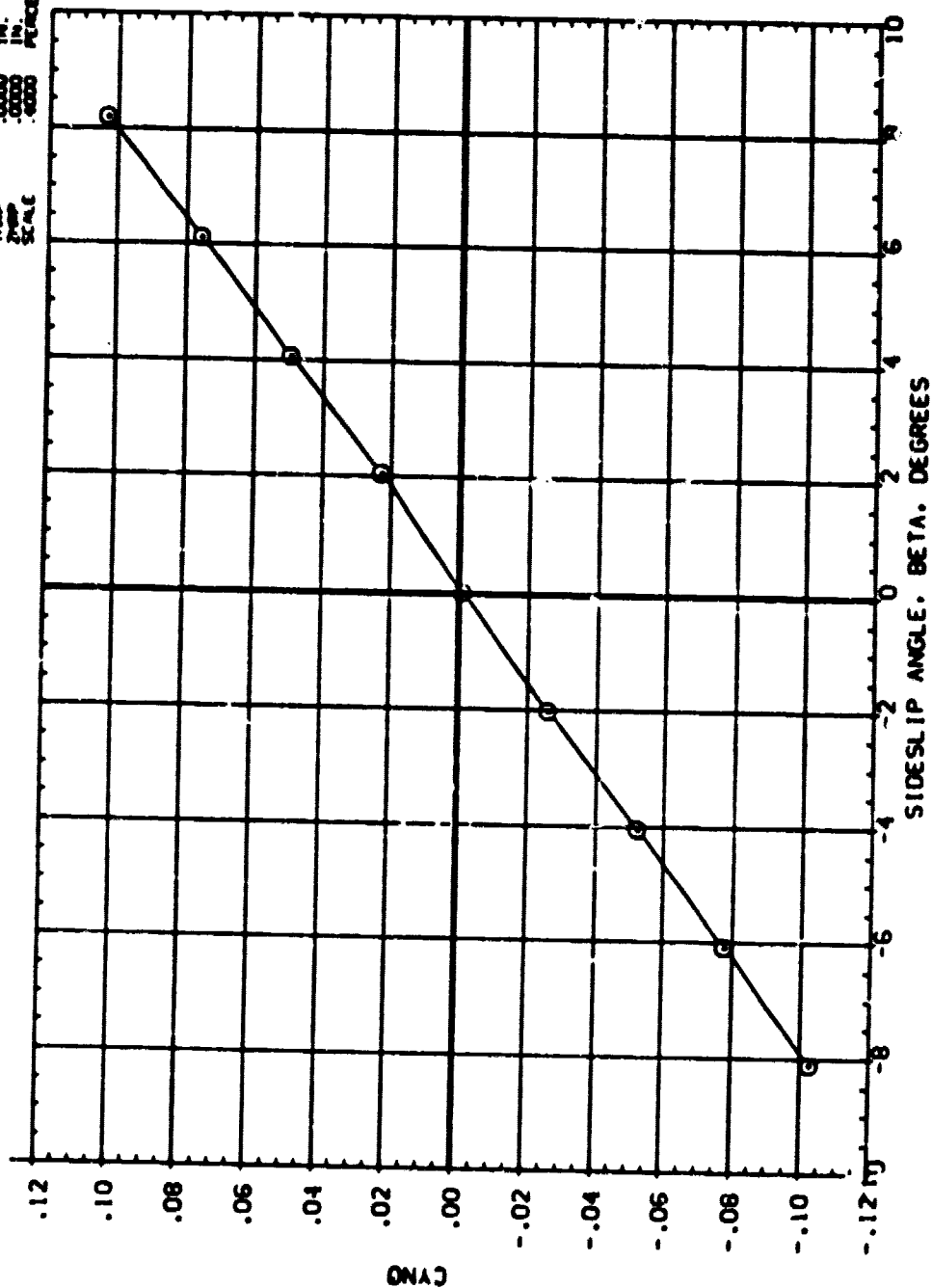


LAUNCH VEHICLE BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: LAUNCH VEHICLE BETA SWEEP
 (PAGE 01) 8
 DATA NOT AVAILABLE

REFERENCE INFORMATION
 SET: 8.1500 50. IN
 LAY: 3.1512 IN.
 DIA: 2.7470 IN.
 DIA: 2.7120 IN.
 DIA: .0000 IN.
 DIA: .0000 IN.
 SCALE: .0000 PERCENT

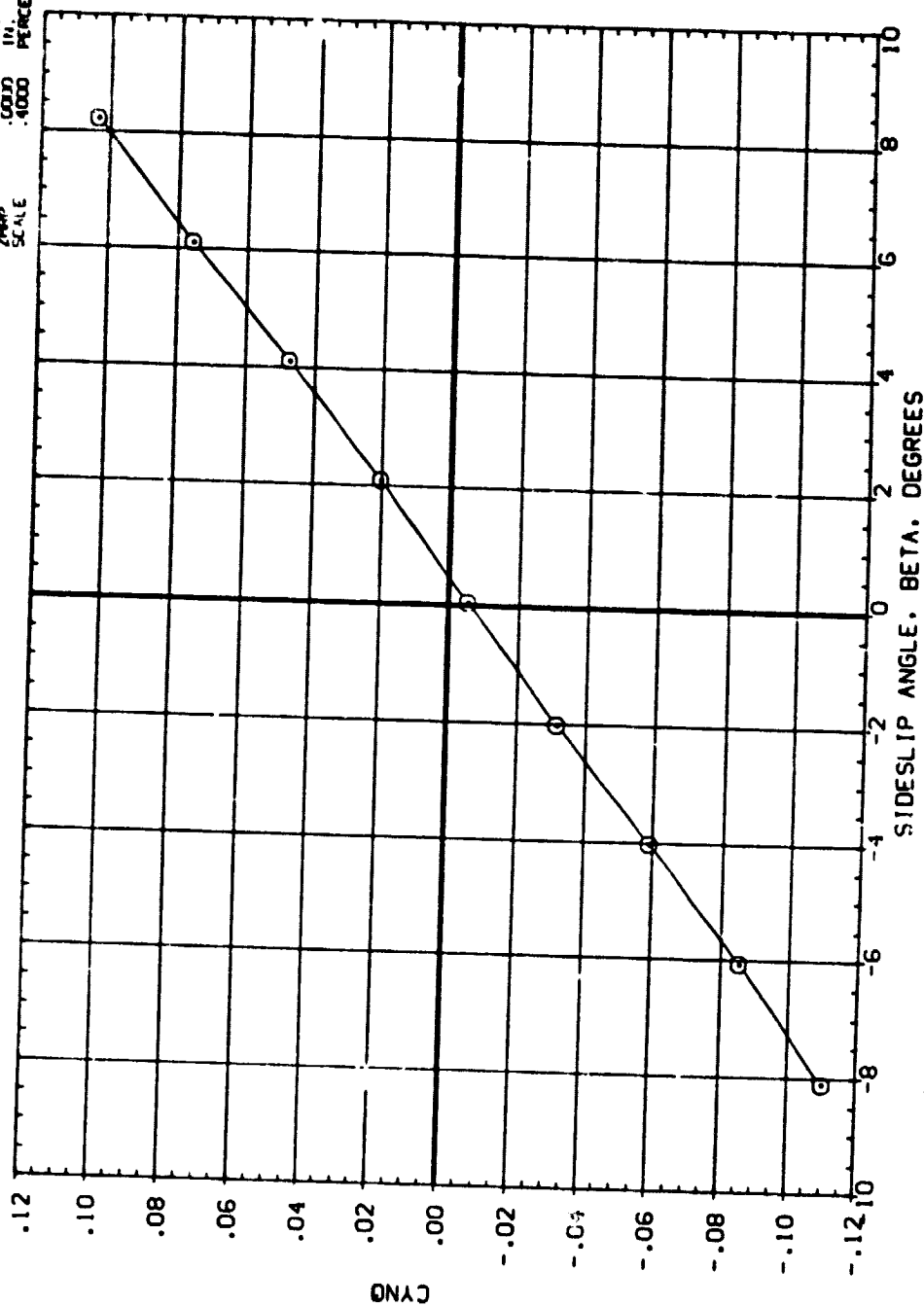


LAUNCH VEHICLE BETA SWEEP

(C)MACH = 1.05

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28, MSFC, TWT, ESS, CONFIG. 02V2E20WAA1T353
 (FA2805) (FA2807) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 50. IN
 LREF 5.1612 IN.
 GREF 3.7470 IN.
 AREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

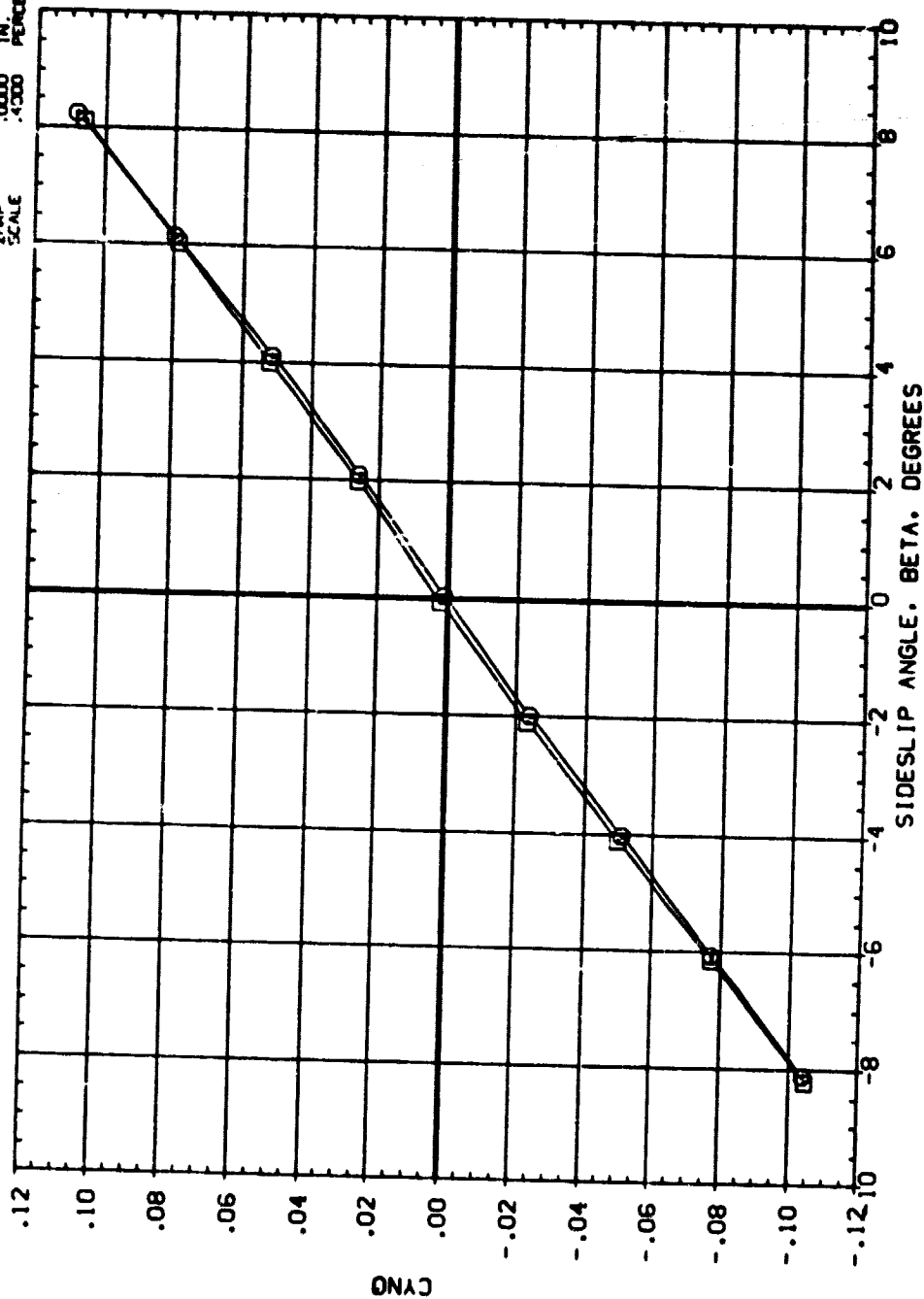


LAUNCH VEHICLE BETA SWEEP

(D)MACH = 1.10

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2805) 8 FA28. MSFC TWT 656. CONFIG. 0702E20WAA1T353
 (FA2807) 8 FA28. MSFC TWT 656. CONFIG. 0202E20WAA1T353

REFERENCE INFORMATION
 SREF 6.1580 IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 VREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4500 PERCENT

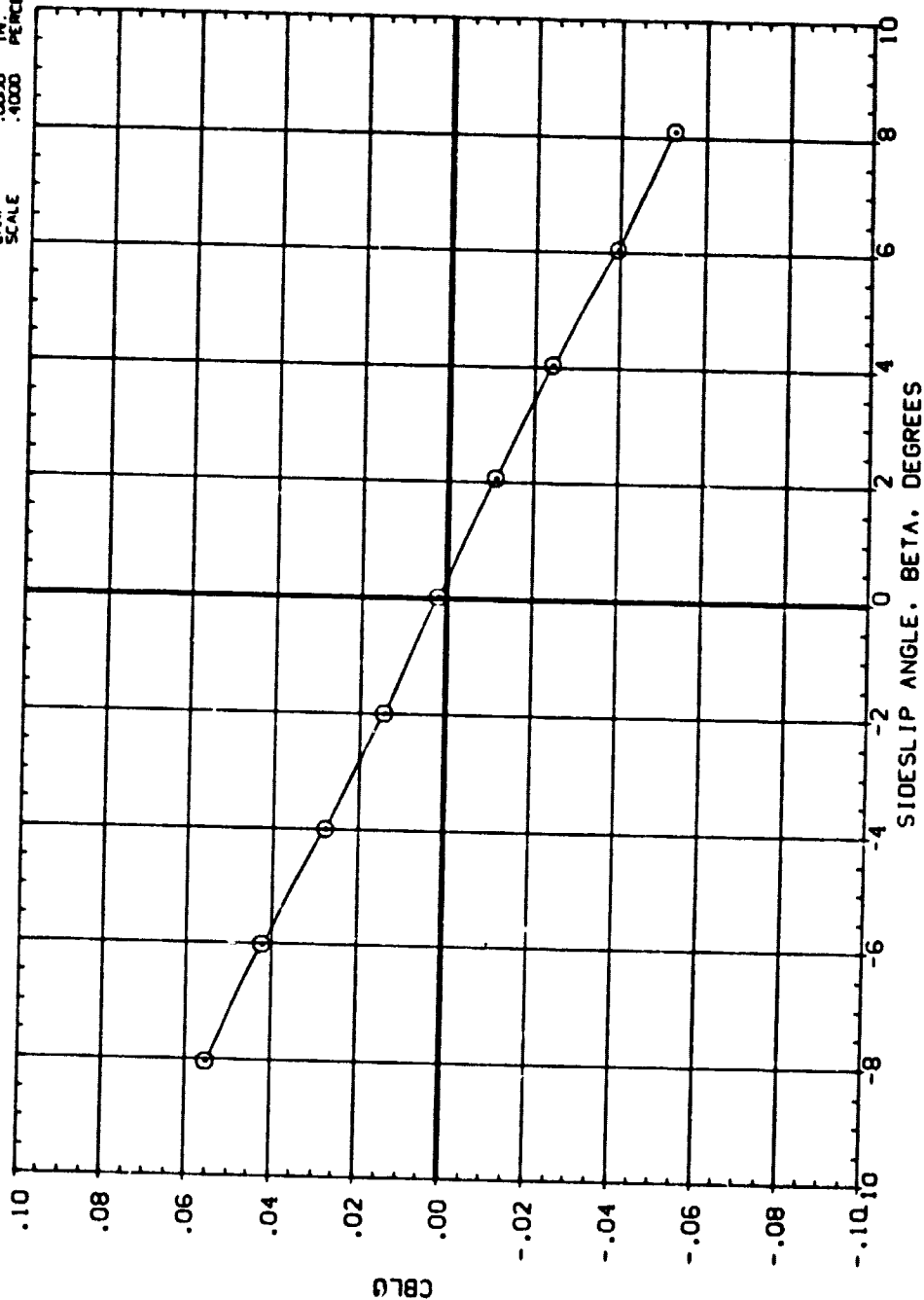


LAUNCH VEHICLE BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION: FA20, MSFC, TWT, USG, CONFIG. 02V2E2WAA11353
 (FA2005) (FA2007) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT

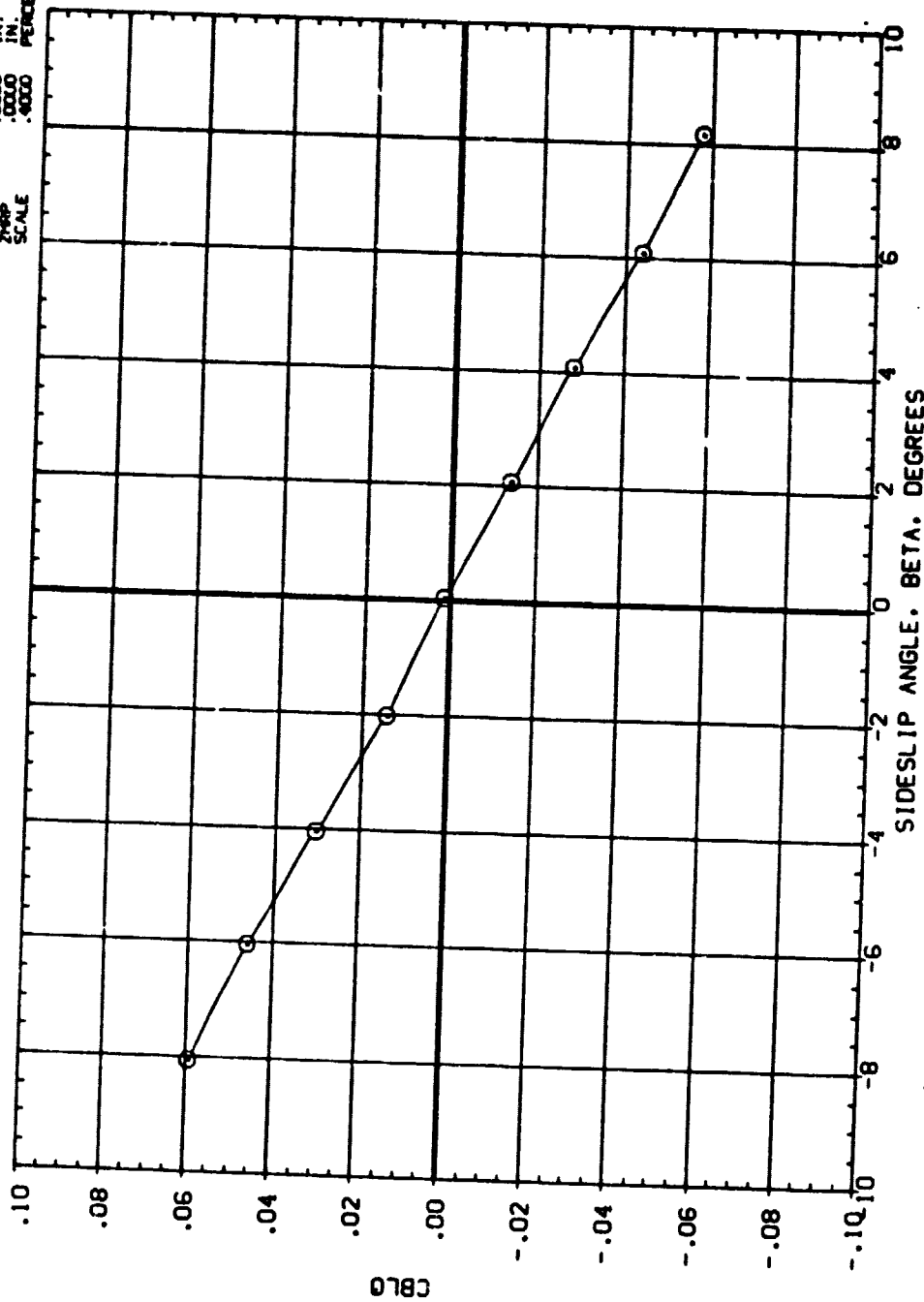


LAUNCH VEHICLE BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL: ☐ CONFIGURATION DESCRIPTION: FA28. MSFC TWT 655. CONFIG. 02V2E2WMAATT3S3
 (FA2805) ☐ DATA NOT AVAILABLE
 (FA2807)

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .0000 PERCENT

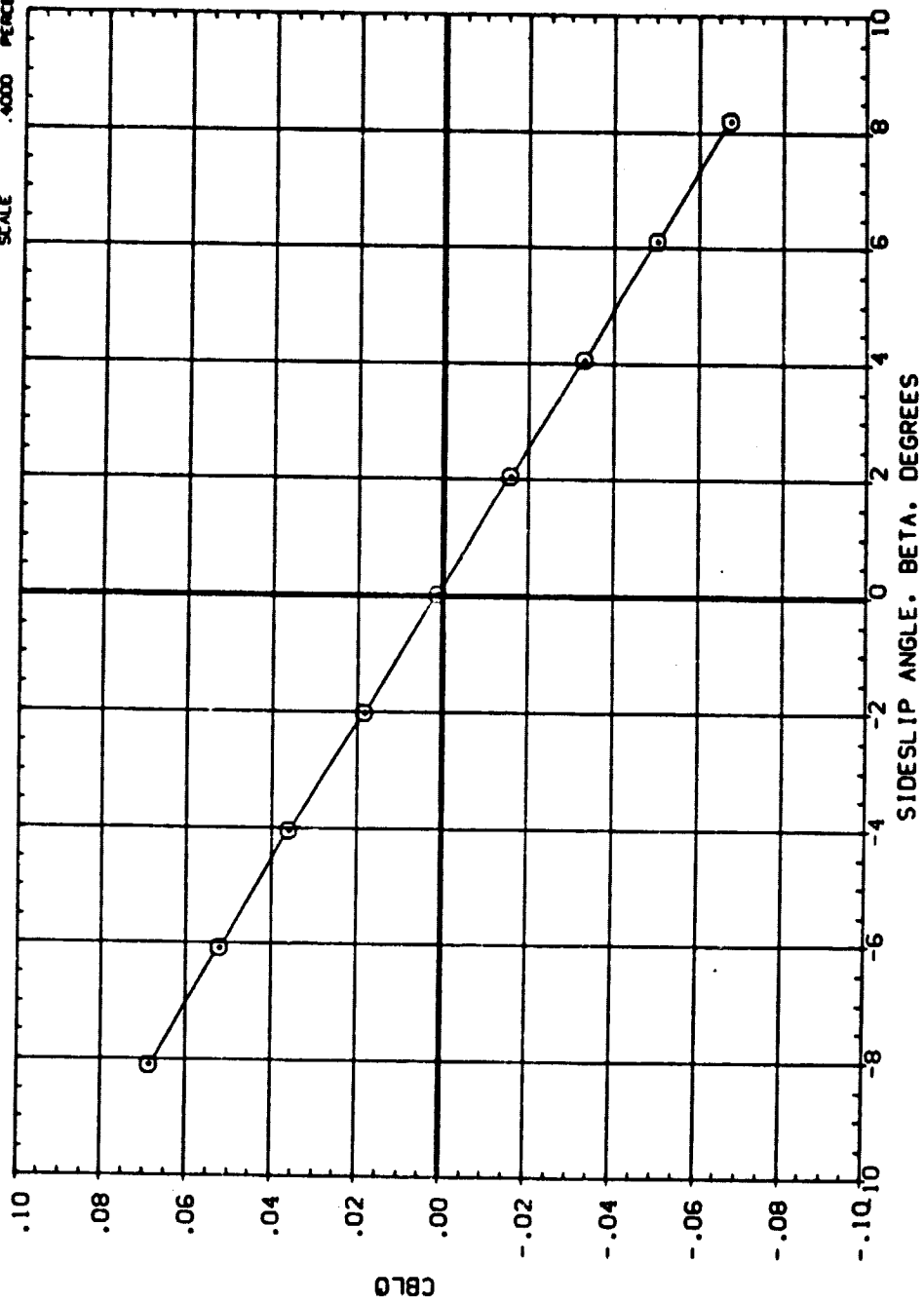


LAUNCH VEHICLE BETA SWEEP

(B)MACH = .90

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28, MSFC, TVT 555, CONFIG. 02VZ20MAAT7353
 (FA2805) (FA2807) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

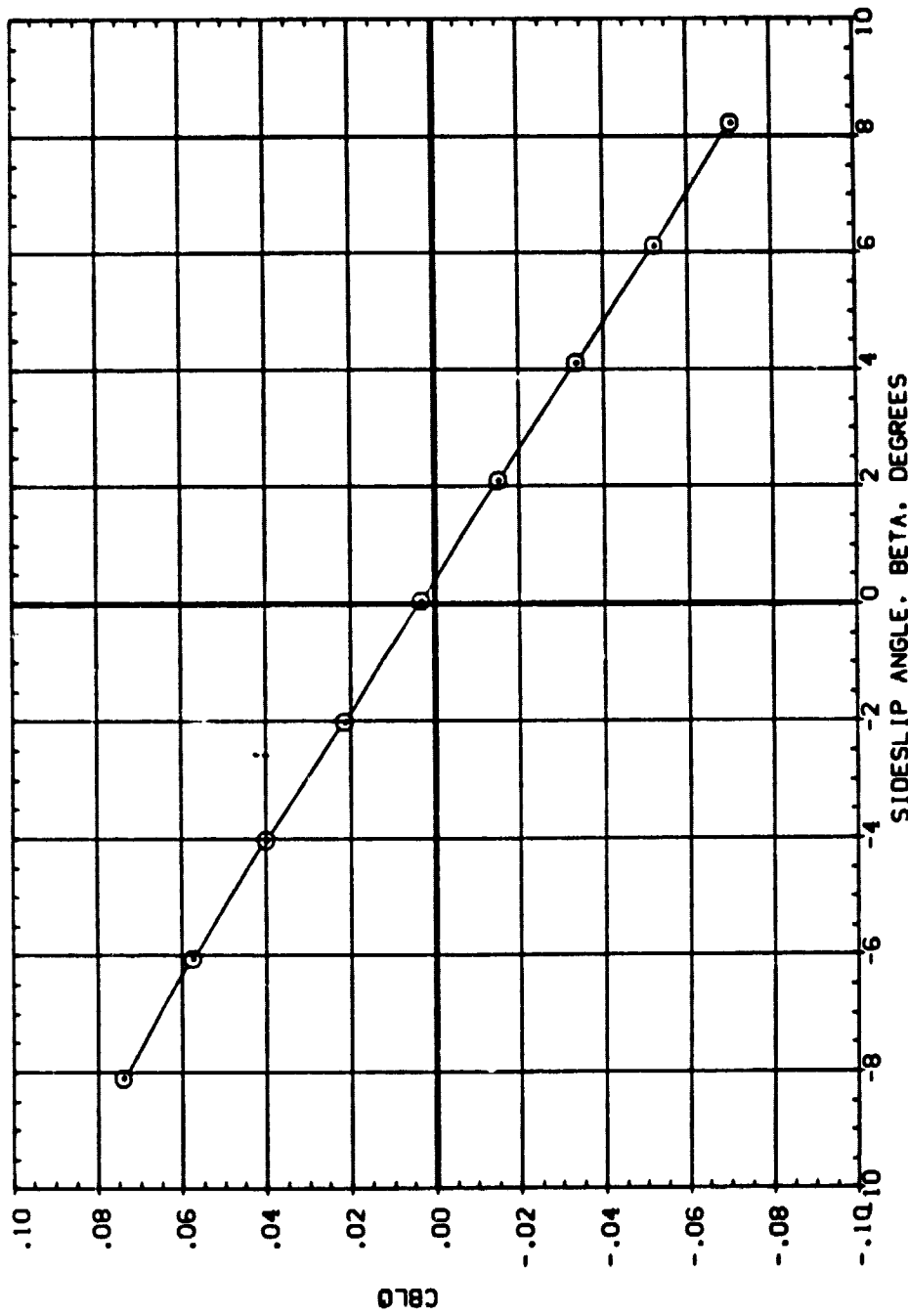


LAUNCH VEHICLE BETA SWEEP

(C)MACH = 1.05

DATA SET SYMBOL: FA28, MSFC TVT 656, CONFIG. 0242E24MAA11353
 (FA2805) B DATA NOT AVAILABLE
 (FA2807)

REFERENCE INFORMATION
 SREF 6.1980 SO. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 JREF 2.7120 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



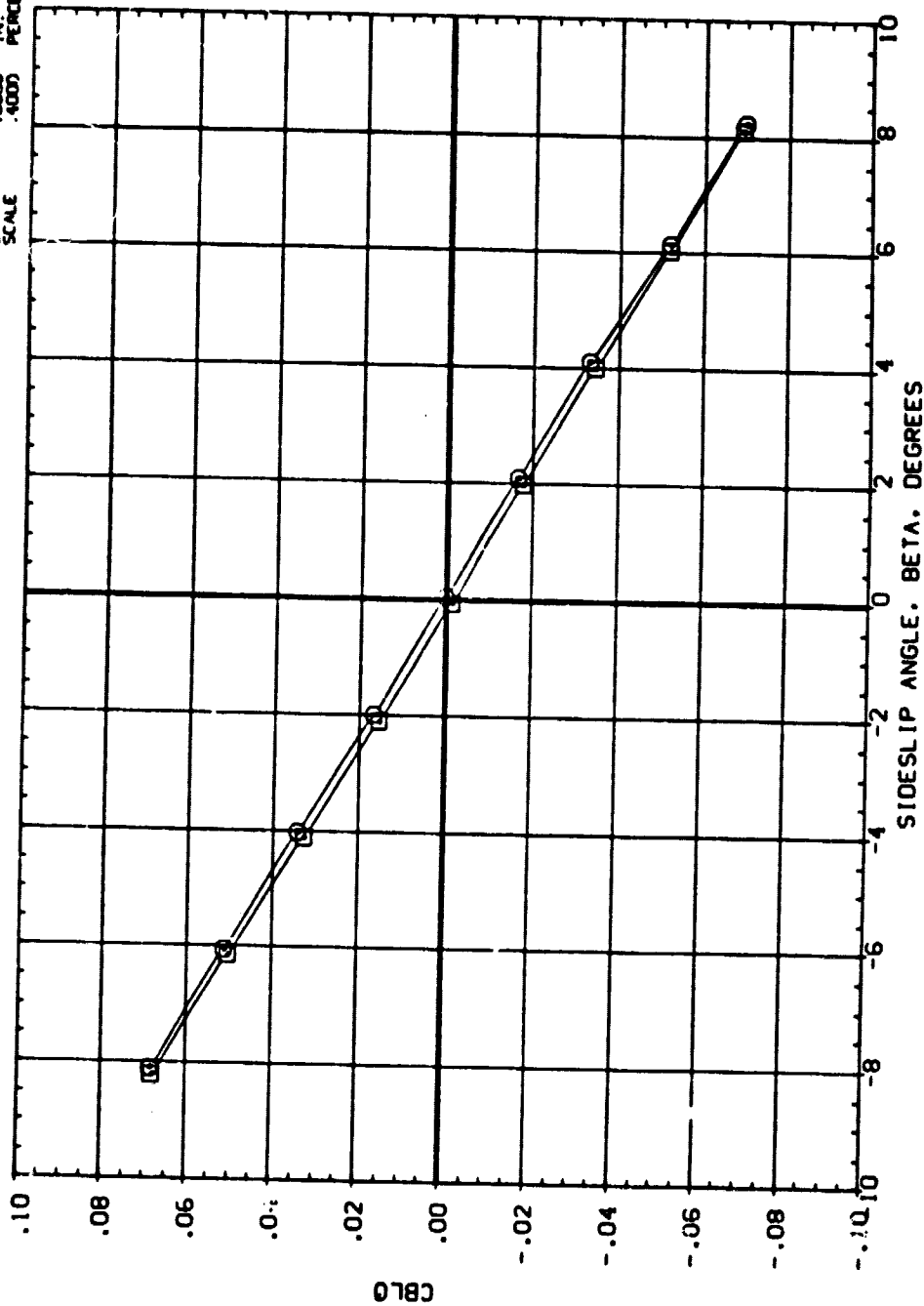
LAUNCH VEHICLE BETA SWEEP

(D)MACH = 1.10

ORIGINAL PAGE IS
 OF POOR QUALITY

DATA SET SYMBOL: FA28. MSFC TVT 656. CONF IG. 03V2E20WMA1153
 (FA2805) □ FA28. MSFC TVT 656. CONF IG. 03V2E20WMA1153
 (FA2807)

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0007 PERCENT

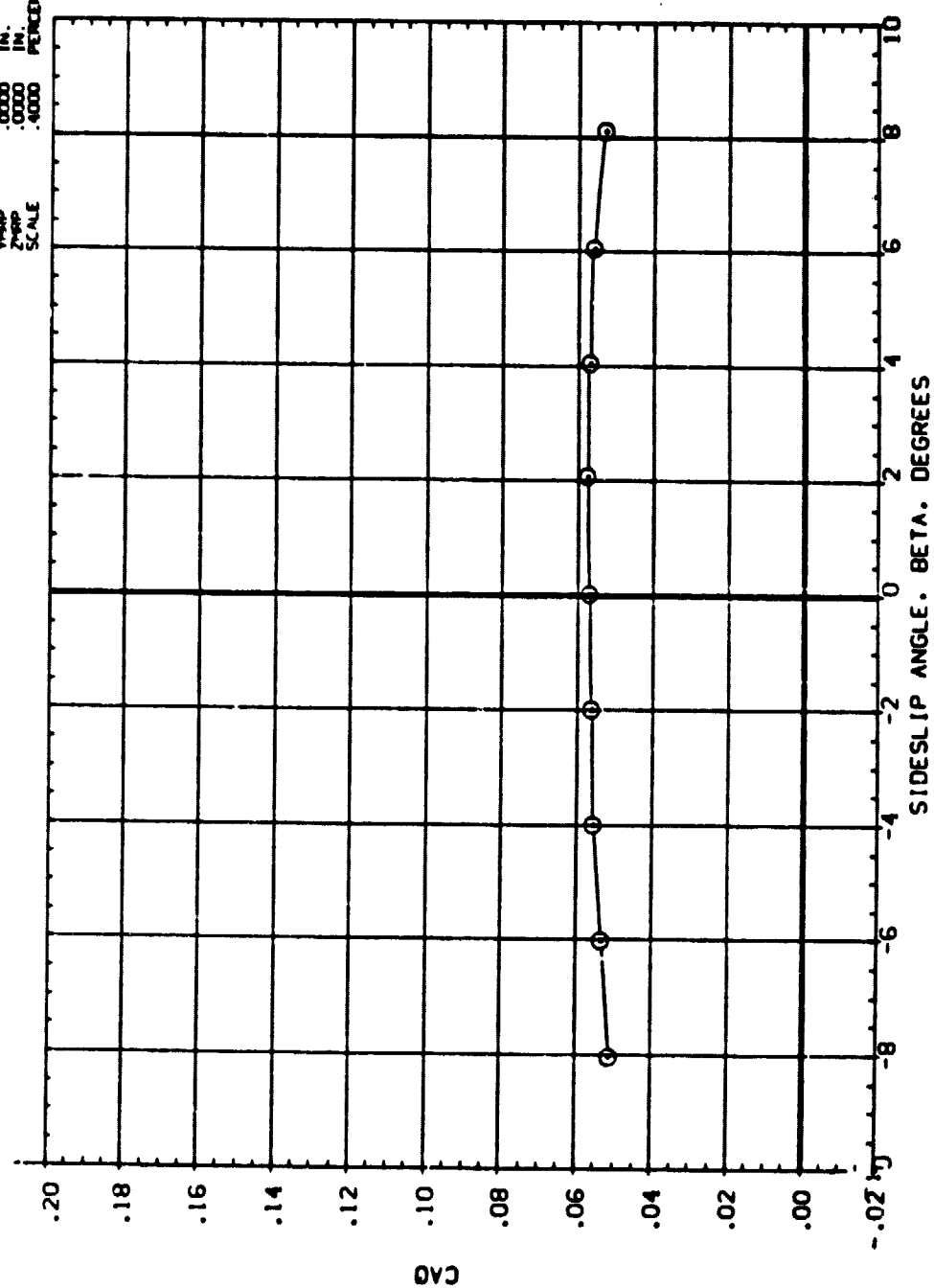


LAUNCH VEHICLE BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL: 8
 (FA2805) (FA2807)
 CONFIGURATION DESCRIPTION: FA28, MSFC, TVT, GSE, CONFIG, GEN2E200WAT1353
 DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

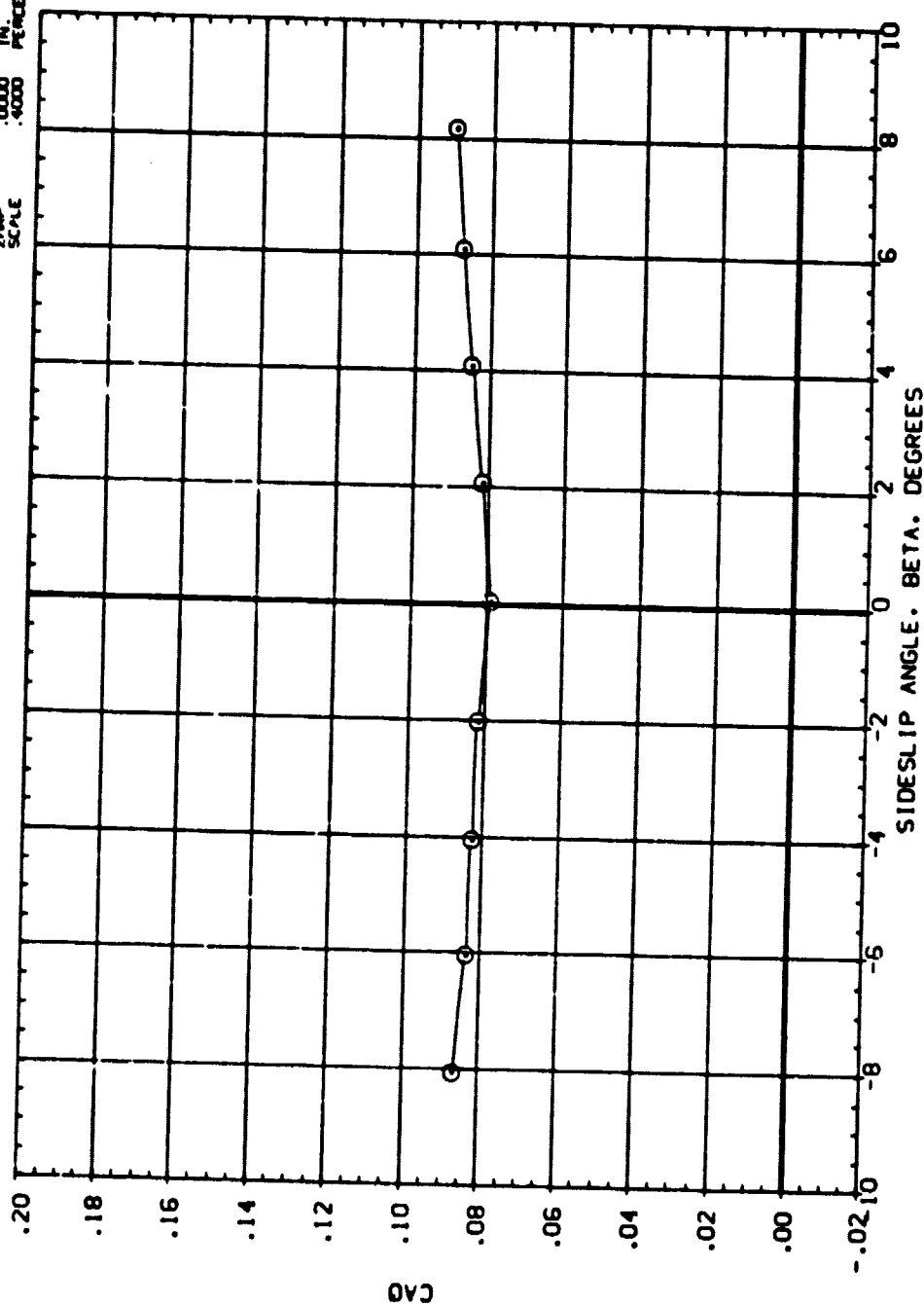


LAUNCH VEHICLE BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL: **0** CONFIGURATION DESCRIPTION: FA20, MSFC INT ESS, CONFIG. 02V220WAA17353
 (FA2005) (FA2007) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 8.1580 IN.
 MREF 5.1612 IN.
 WREF 2.7470 IN.
 WPROP 2.7120 IN.
 WPROP .0000 IN.
 WPROP .0000 IN.
 SCALE .0000 PERCENT

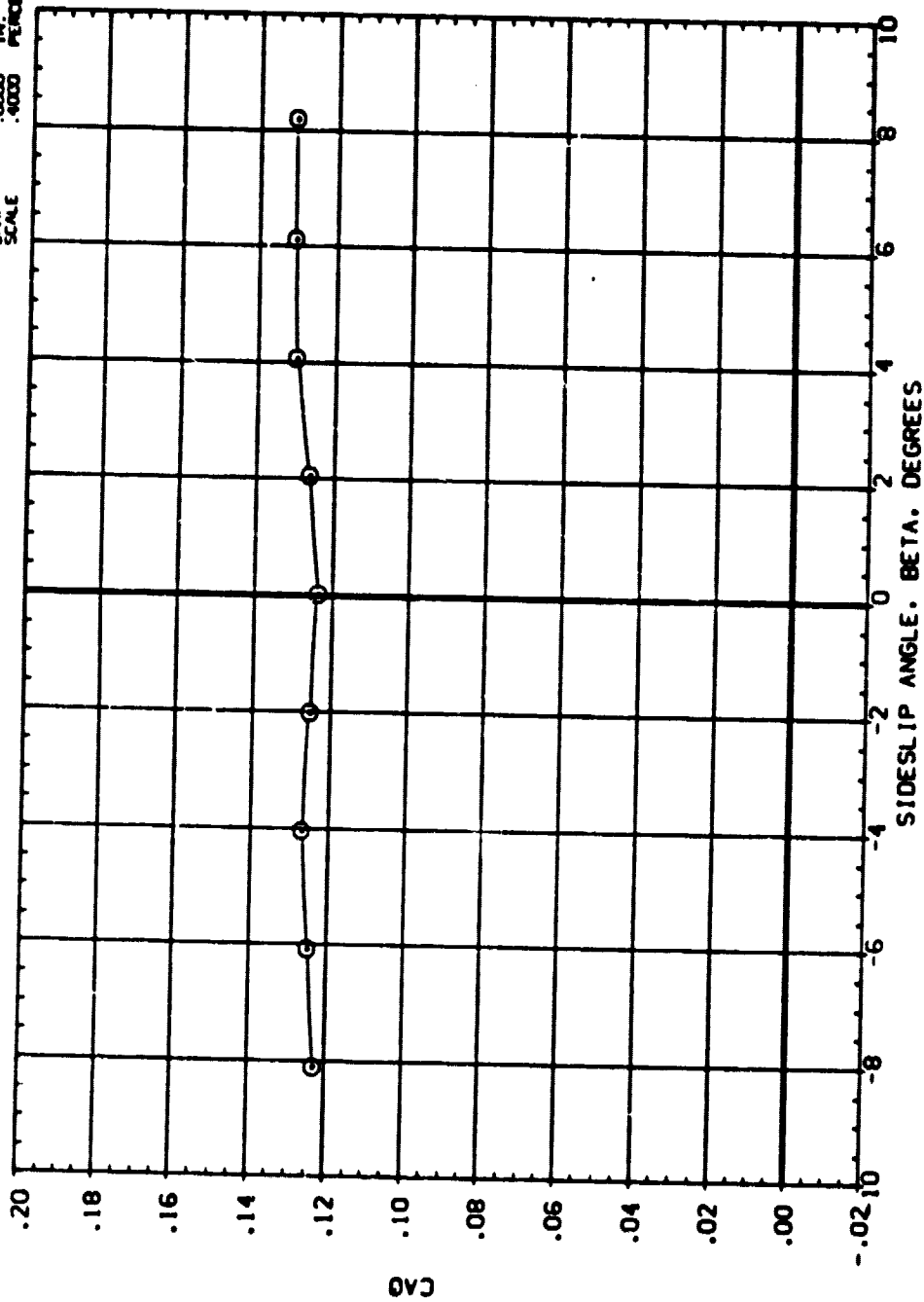


LAUNCH VEHICLE BETA SWEEP

(B)MACH = .90

DATA SET SYMBOL: ☐ FA20. MSFC TVT 656. CONFIG. 02UZE200AA17353
 (FA2007) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 DREF 3.7470 IN.
 YPROP 2.7120 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

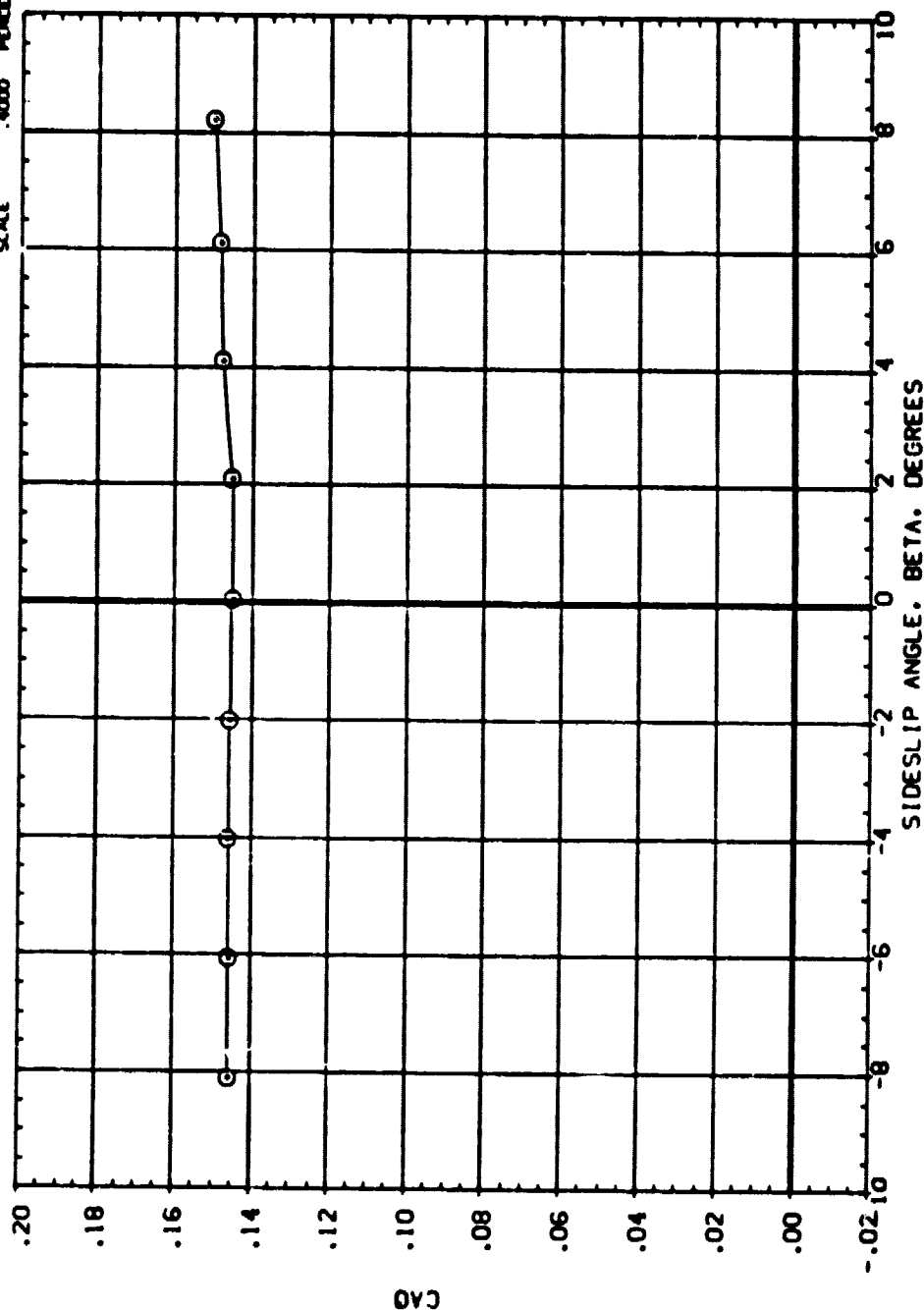


LAUNCH VEHICLE BETA SWEEP

(C)MACH = 1.05

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28, MSFC TWT 556, CONFIG. 0202E2000A1T353
 (FA2805) (FA2807) DATA NOT AVAILABLE

REFERENCE INFORMATION
 CASE: 6-1890 90. IN
 LIFT: 3-1612 IN.
 SPAC: 3-7470 IN.
 WING: 2-7120 IN.
 TAPER: .0000 IN.
 SCALE: .4000 PERCENT

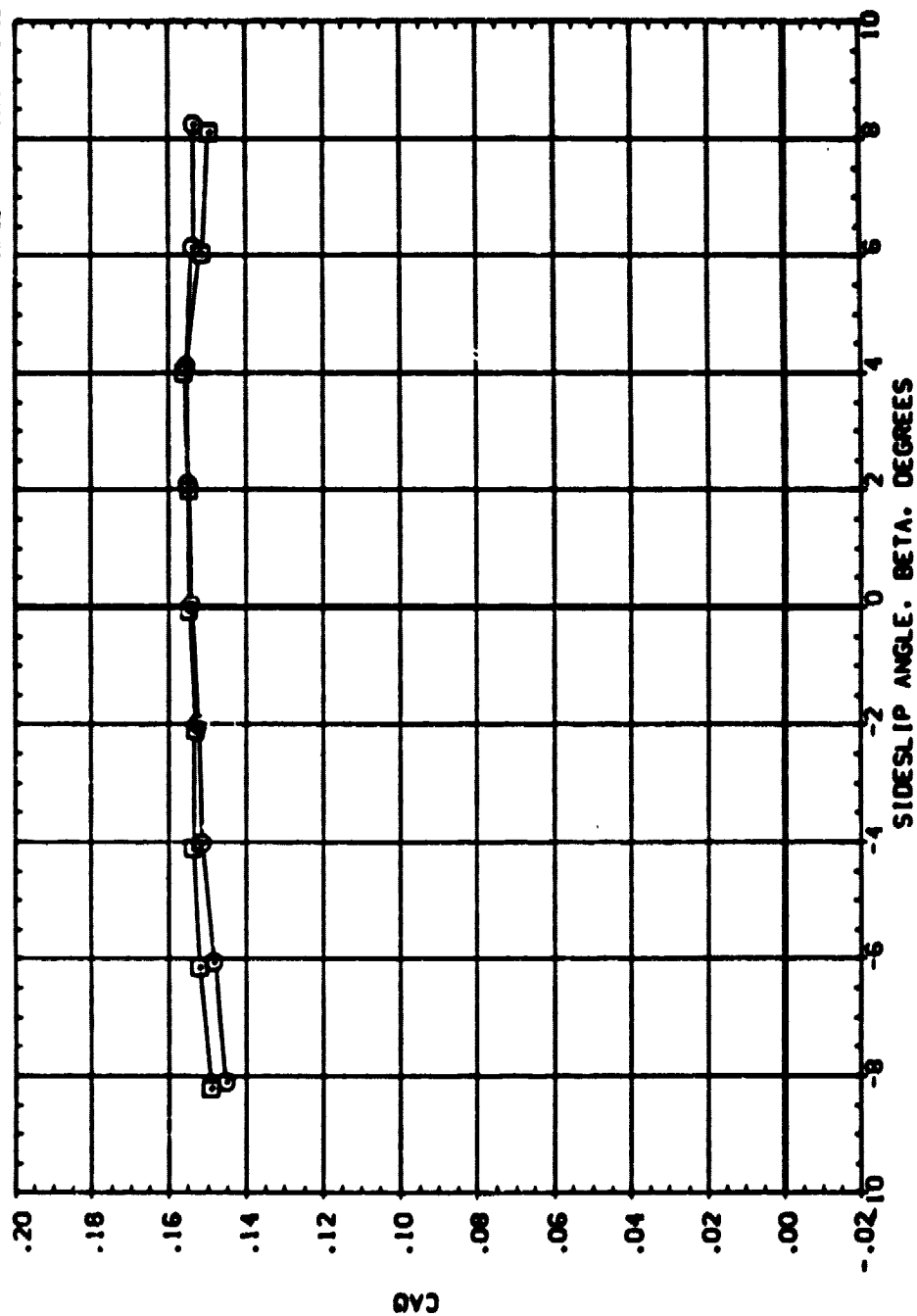


LAUNCH VEHICLE BETA SWEEP

(D)MACH = 1.10

DATA SET SWEEP CONFIGURATION DESCRIPTION
 (PAGES) 0 P/2B: M5C TVT 62B: C0616: C0627MMATT23
 (P/2B7) 0 P/2B: M5C TVT 62B: C0616: C0627MMATT53

REFERENCE INFORMATION
 DAY 9.1980 20. IN
 LAT 3.1612 IN.
 LONG 2.7470 IN.
 WIND 2.7120 IN.
 TEMP .0000 IN.
 PRES .0000 IN.
 SCALE PERIOD

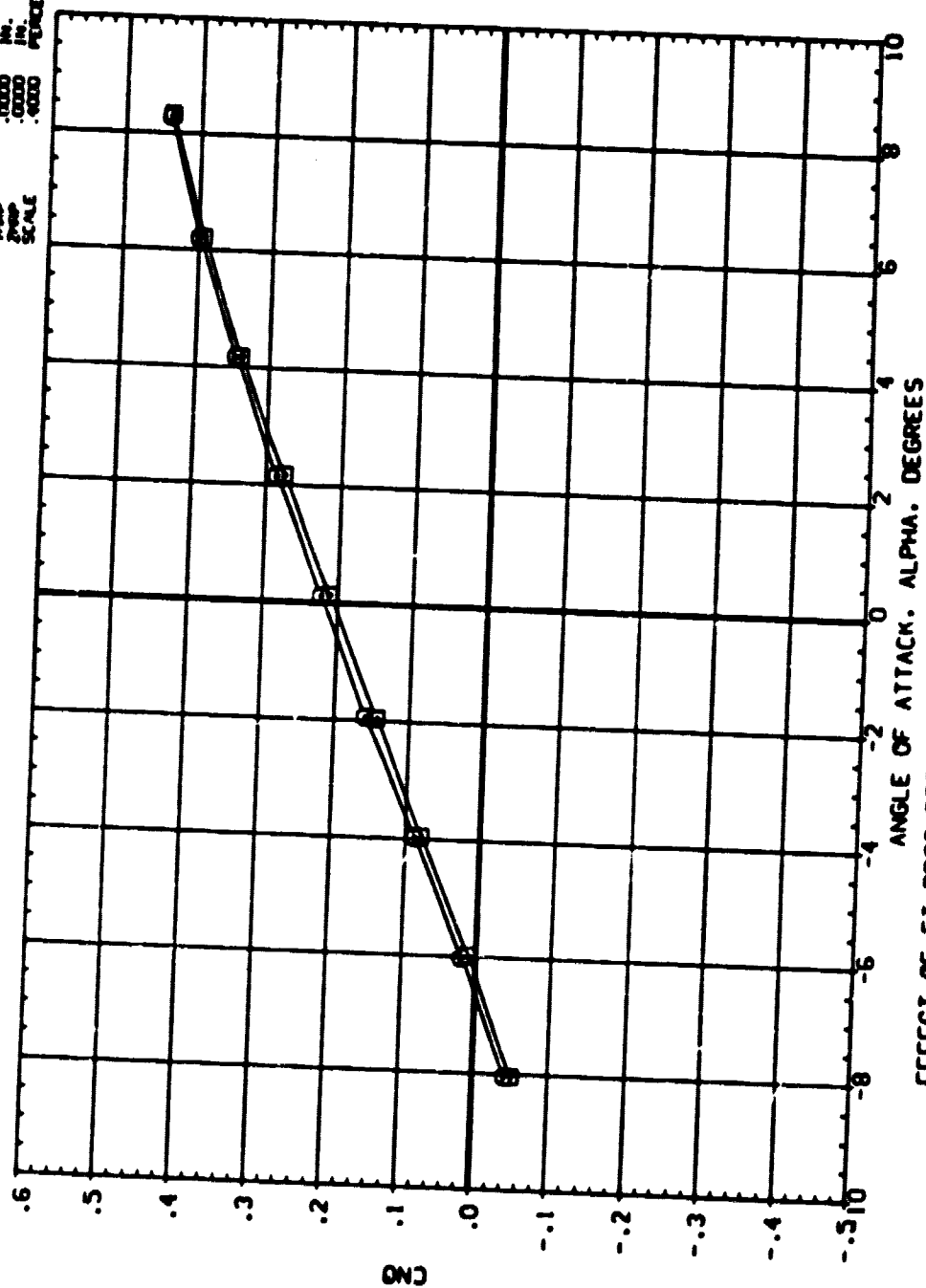


LAUNCH VEHICLE BETA SWEEP

(E)MACH = 1.25

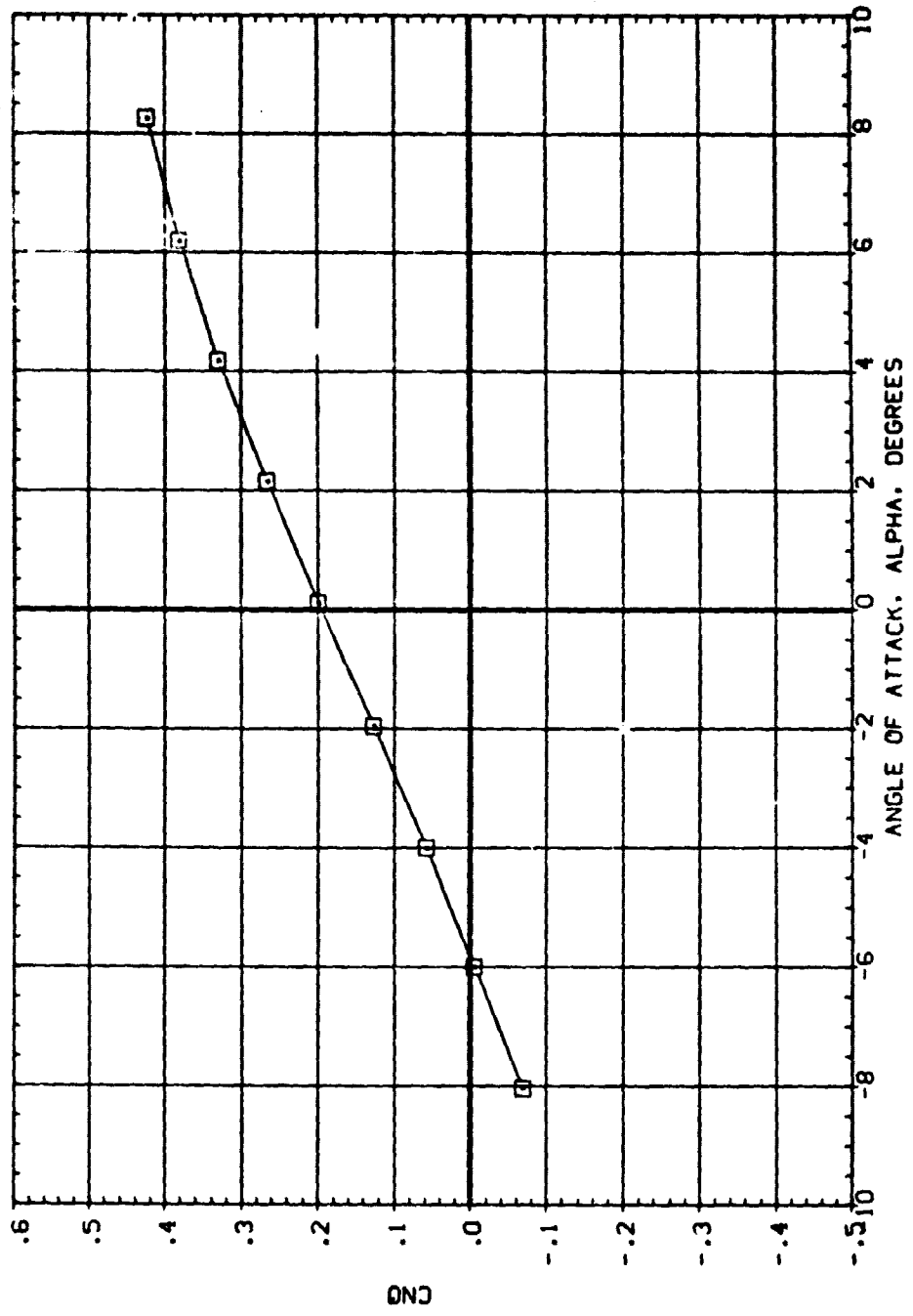
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(FAPRIS) 0	0	0

SCALE	NUMBER IDENTIFICATION
1000	IN.
2000	IN.
3000	IN.
4000	IN.
5000	IN.
6000	IN.
7000	IN.
8000	IN.
9000	IN.
10000	IN.


$$(B)_{MACH} = .90$$

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION: DATA NOT AVAILABLE
 (FA2805) (FA2808) FA28. MSFC TUT 656. CONFIG. 0002E2P0A1T353

REFERENCE INFORMATION:
 SREF 5.1580 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 XREF 3.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 PERCENT 4000



EFFECT OF ET PROTUBERANCES

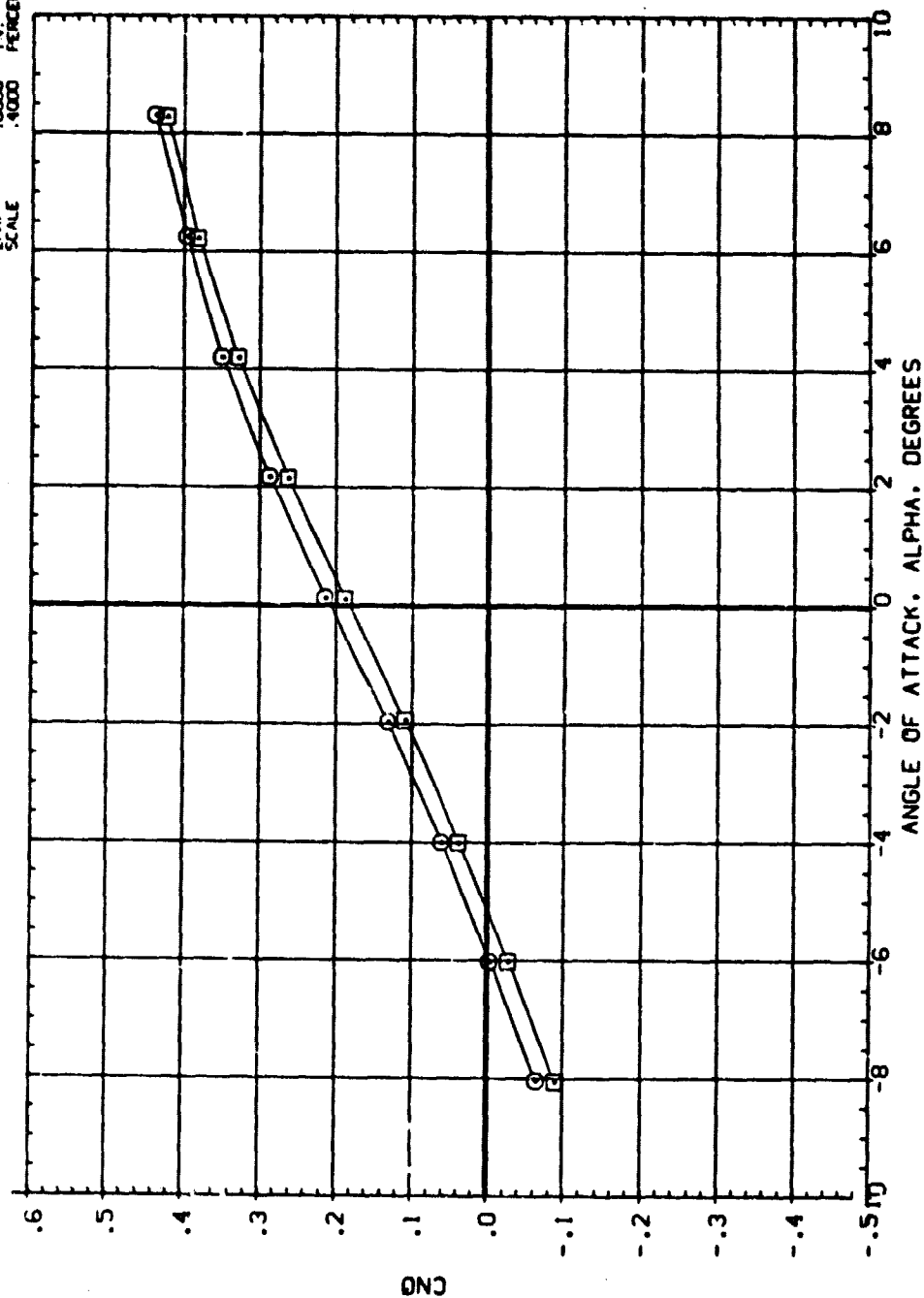
(C)MACH = .95

DATA SET SYMBOL: (FA2008) \square (FA2005) \square

CONFIGURATION DESCRIPTION

FA28. MSFC TVT 656. CONF 16. 02NZE200NAT1353
 FA28. MSFC TVT 656. CONF 16. 02NZE200NAT1353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.1470 IN.
 ARPD 2.7120 IN.
 TRPD .0000 IN.
 THRD .0000 IN.
 SCALE .4000 PERCENT

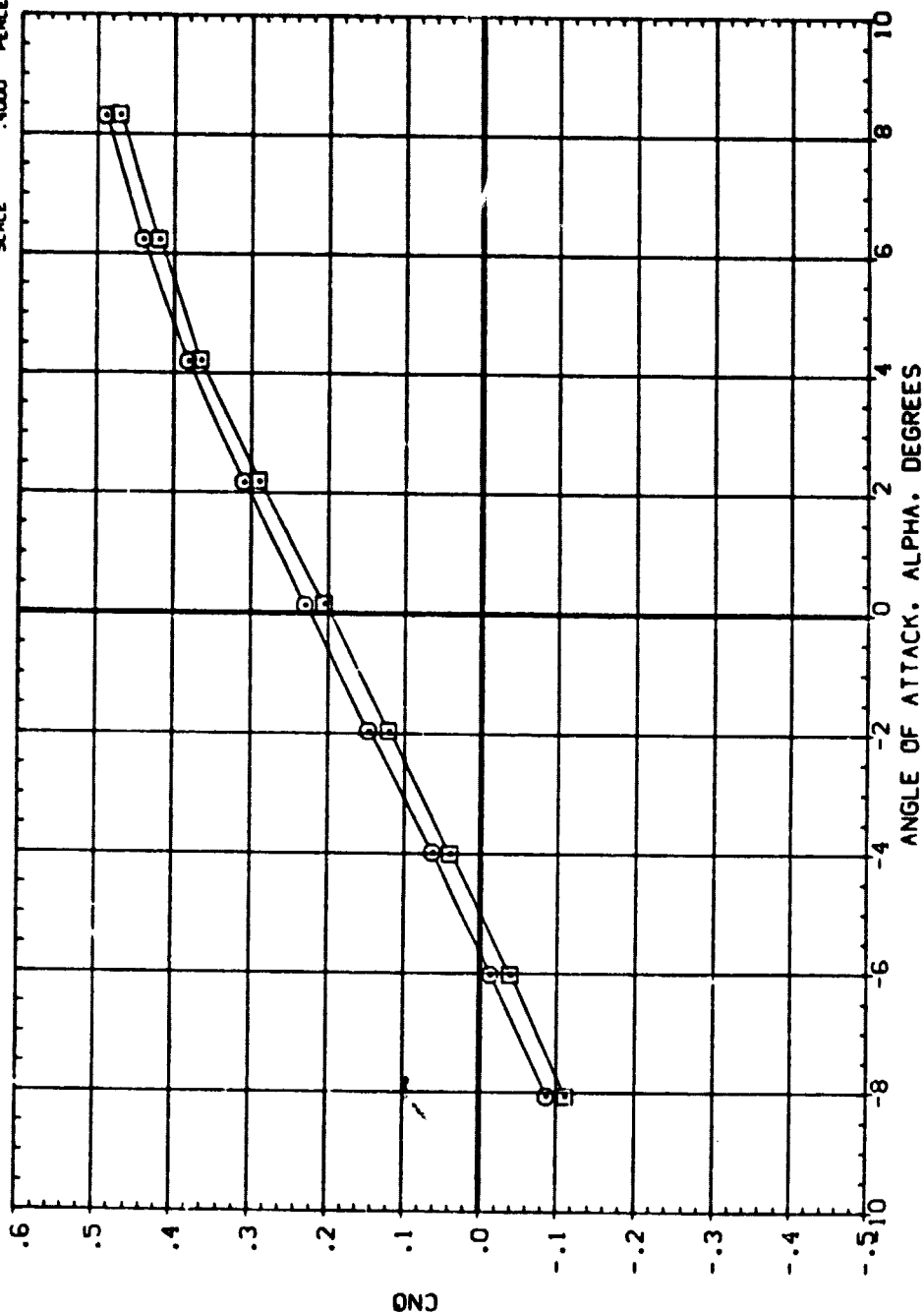


EFFECT OF FT PROTUBERANCES

(O)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2805) □ FA28. M5FC TVT 656. CONF IG. 02NZE20NPAAT1353
 (FA2808) □ FA28. M5FC TVT 656. CONF IG. 02NZE20NPAAT1353

REFERENCE INFORMATION
 SREF 6.1280 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 VREF 2.7120 IN
 ZREF .0000 IN
 SCALE .0000 IN
 PERCENT

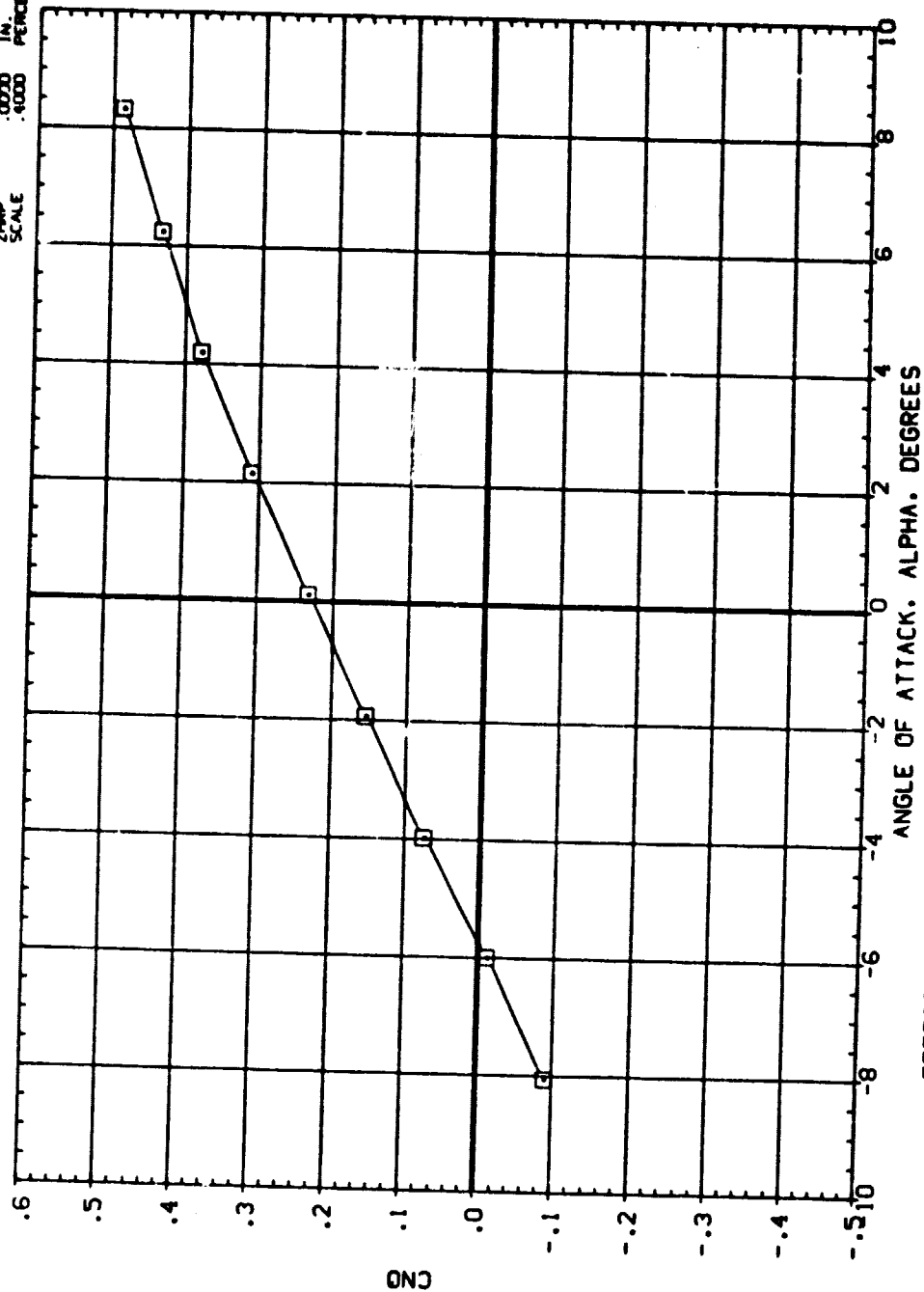


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.11

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2805) DATA NOT AVAILABLE
 (FA2808) FA28. H5FC 10T 656, CONF 10, 02V2E2PAPAA1T353



REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 PPROP 2.7120 IN.
 YPROP .0000 IN.
 ZPROP .0070 IN.
 SCALE .4000 PERCENT



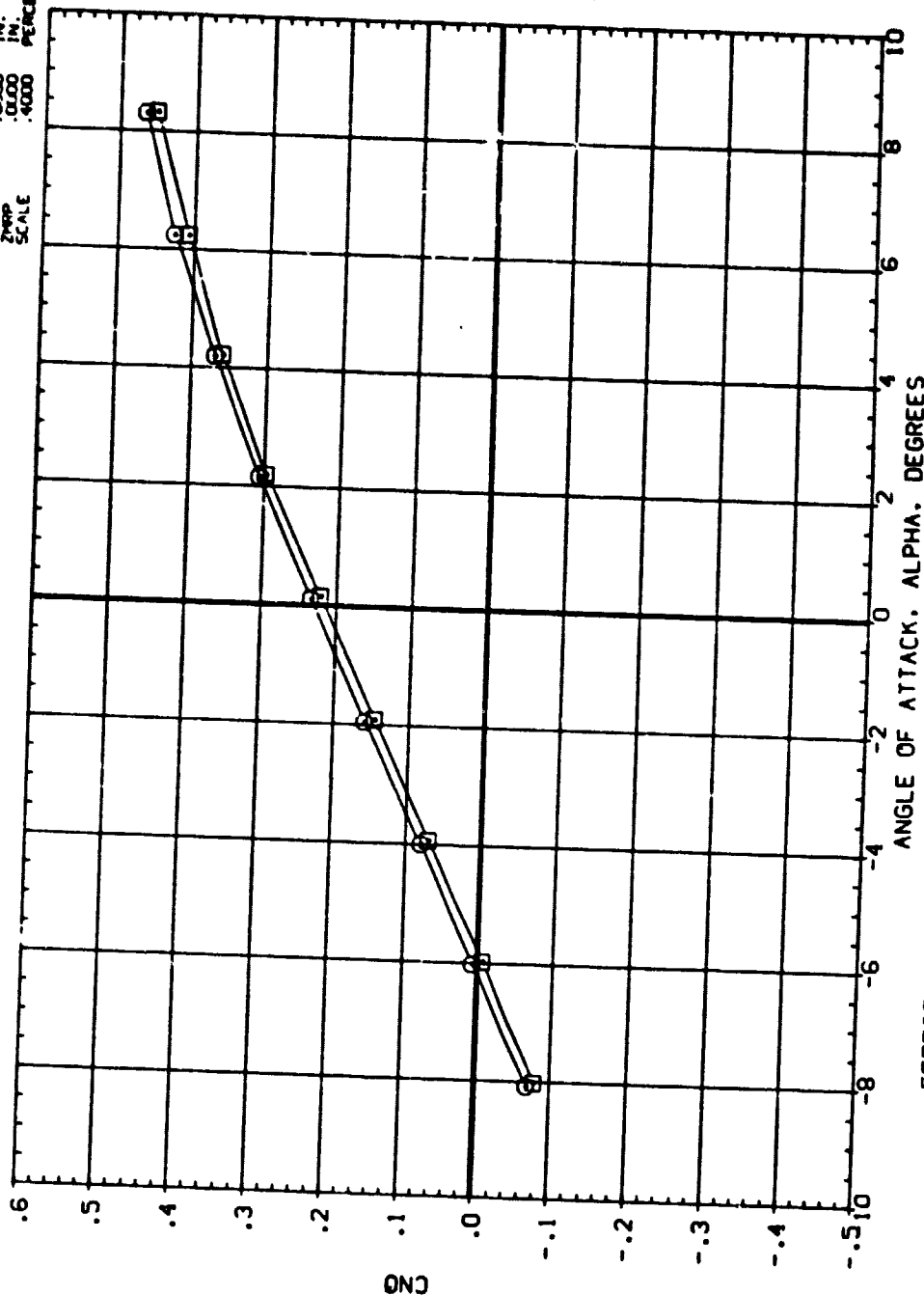
EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15

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DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2805)  FA28: MSFC TWT 656: CONF 16: 02N2E200NAT1753
 (FA2808)  FA28: MSFC TWT 656: CONF 16: 02N2E200NAT1753

REFERENCE INFORMATION
 SPEC 6.1580 50. IN
 LREF 5.1612 IN.
 SREF 3.7470 IN.
 VREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
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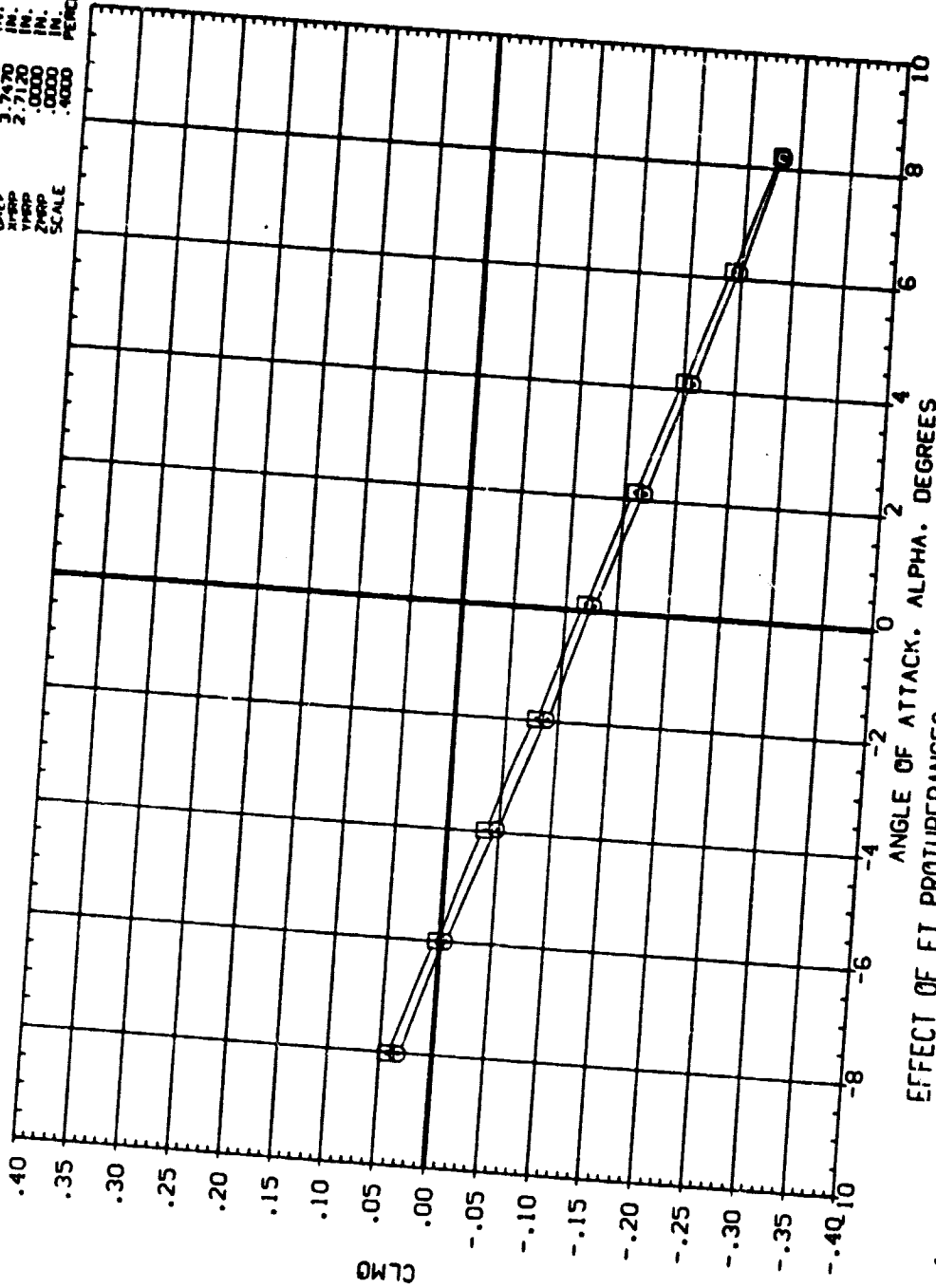


EFFECT OF ET PROTUBERANCES


(G)MACH = 1.25

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2805) (FA2808) FA28. MSFC TVT 656. CONF IG. 02NZE20MAAT1353
 FA28. MSFC TVT 656. CONF IG. 02NZE20MAAT1353

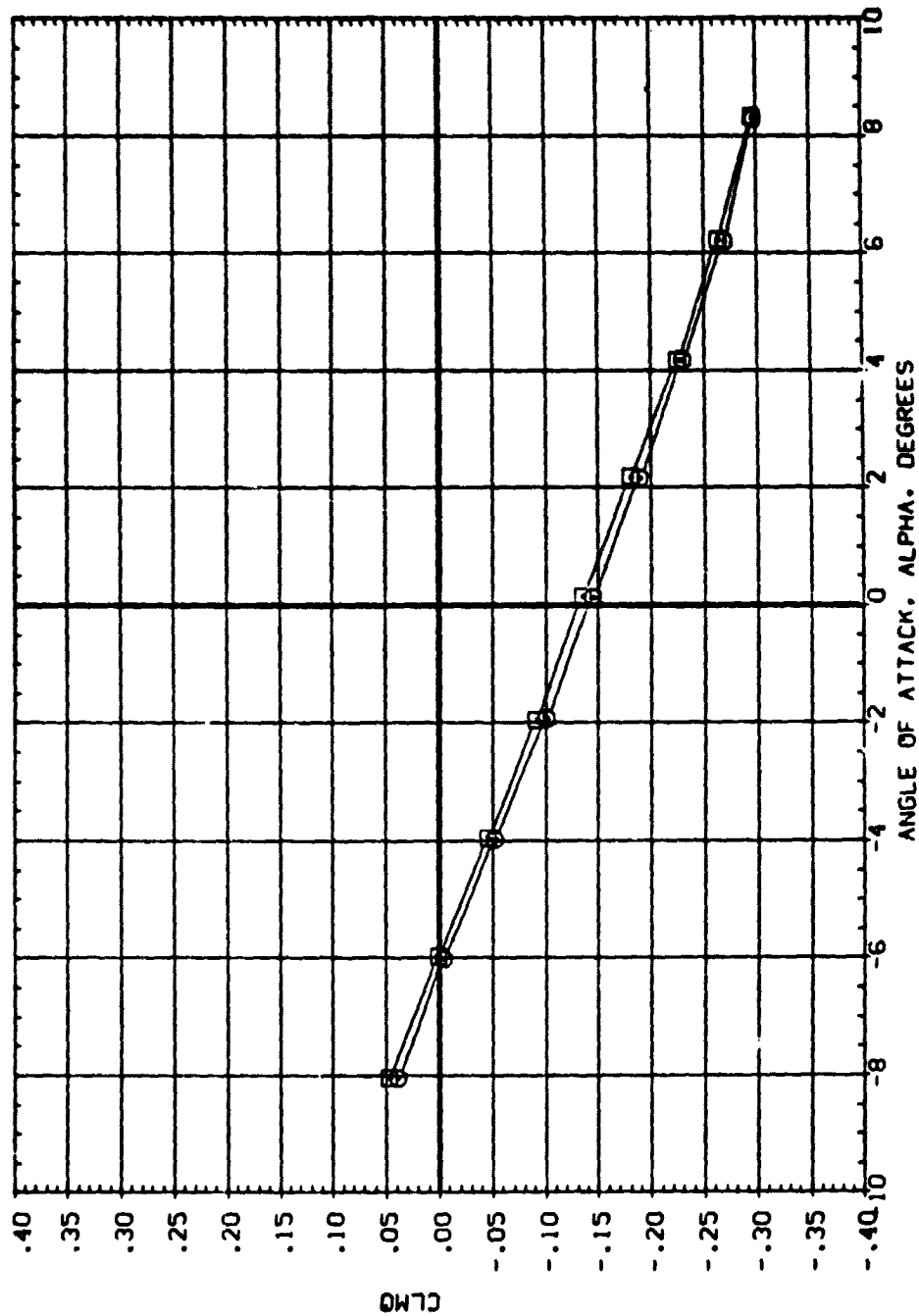
REFERENCE INFORMATION
 SREF 6.1380 50. IN
 LREF 3.1612 IN.
 BREF 2.7470 IN.
 YMRP 2.7120 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT



(A)MACH = .60

DATA SET SYMBOL: (FA2805) (FA2808)  CONFIGURATION DESCRIPTION: FA28. MSFC TVT 656. CONF 1G. Q2N2E20NNA11553 FA28. MSFC TVT 656. CONF 1G. Q2N2E20NPA11553

REFERENCE INFORMATION
 SREF 6.1880 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

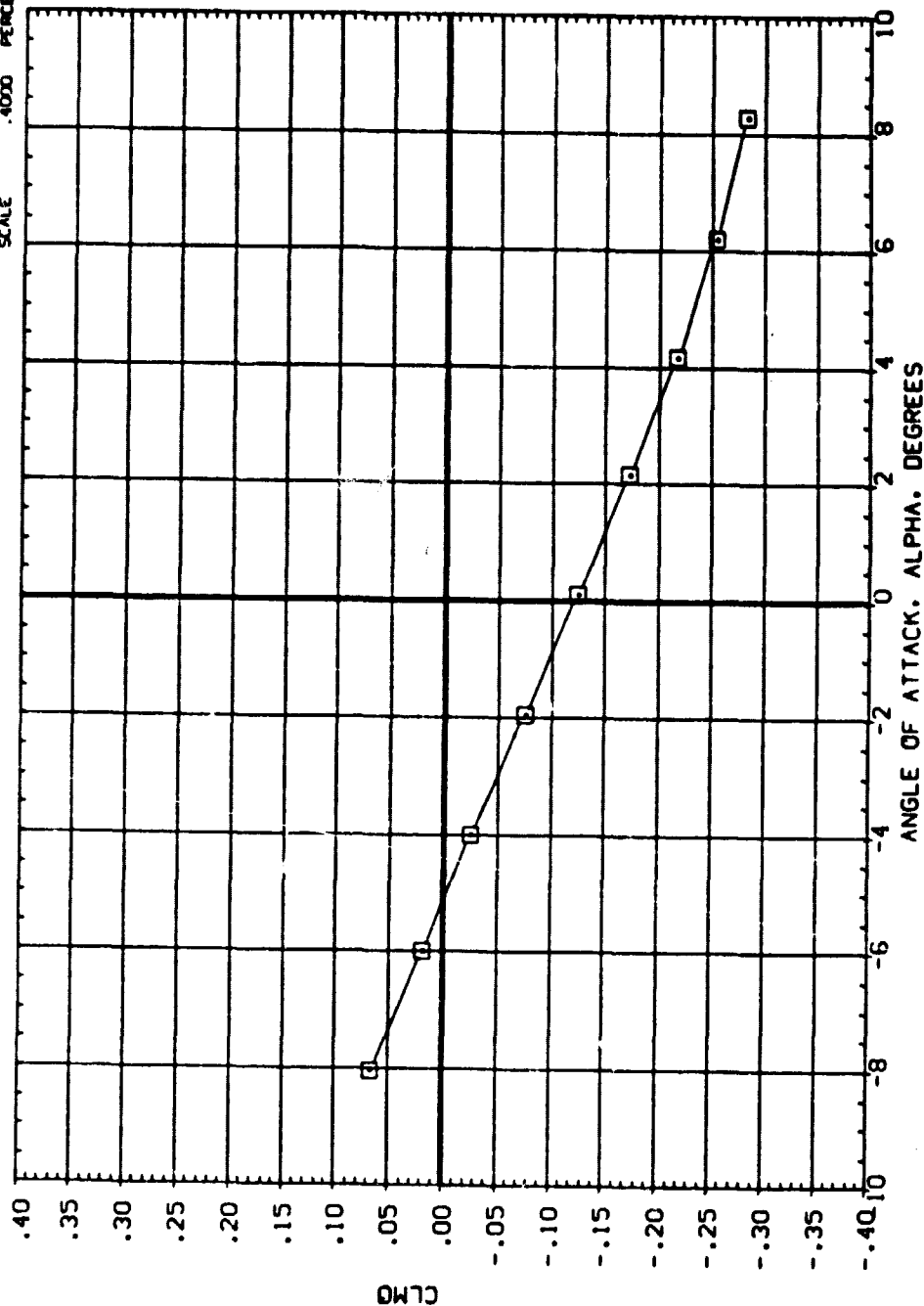


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL: ☐ CONFIGURATION DESCRIPTION:
 (FA2805) DATA NOT AVAILABLE
 (FA2808) FA28. MSFC TVT 656. CONFIG. 02N2E2M0AAT1353

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT

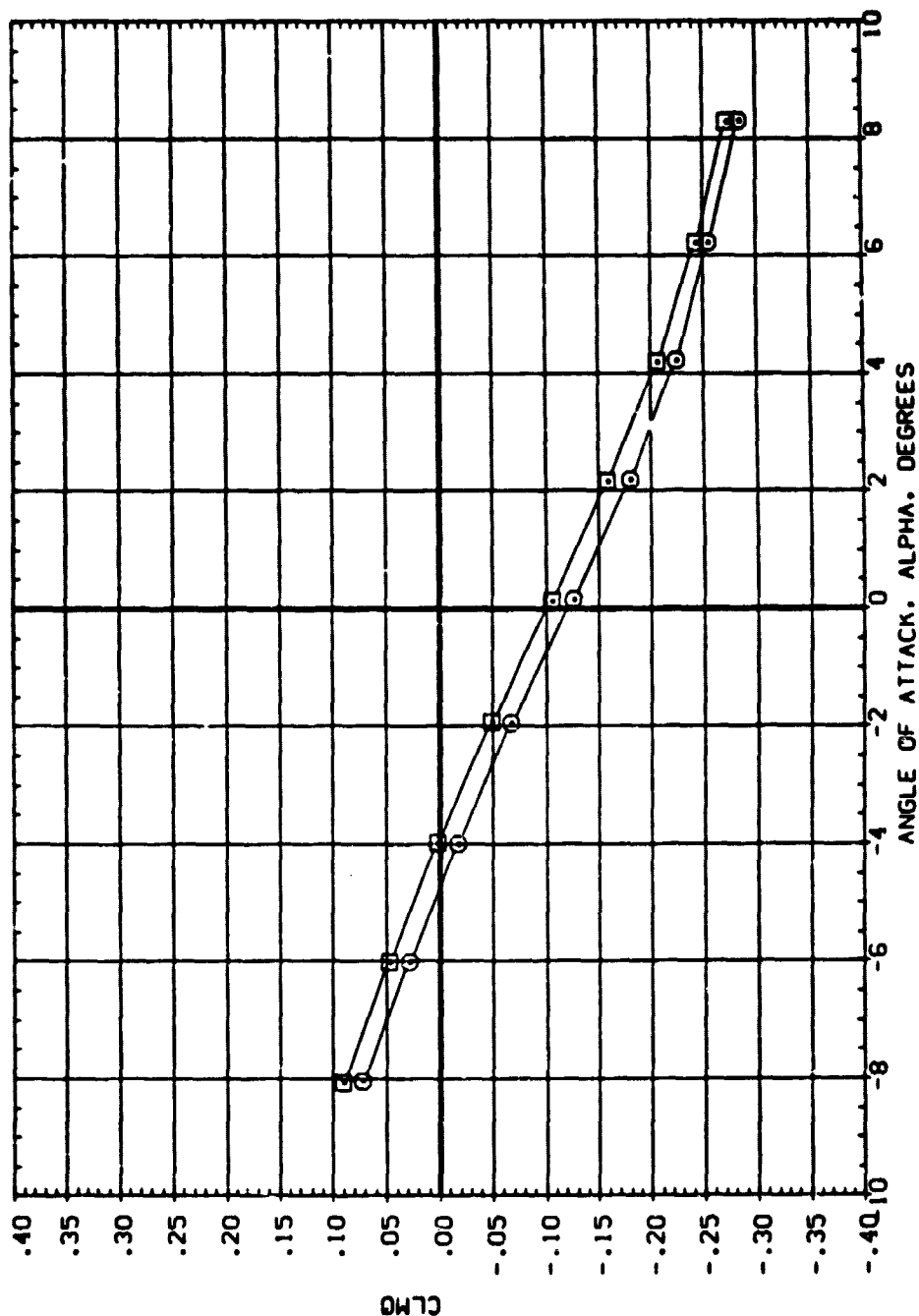


EFFECT OF ET PROTUBERANCES

(C)MACH = .95

DATA SET SYMBOL: (FA2005) **B** (FA2008)
 CONFIGURATION DESCRIPTION: FA20. MSFC TVT 656. CONF 1G. 02NZE20MAAT1353
 FA20. MSFC TVT 656. CONF 1G. 02NZE20MAAT1353

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
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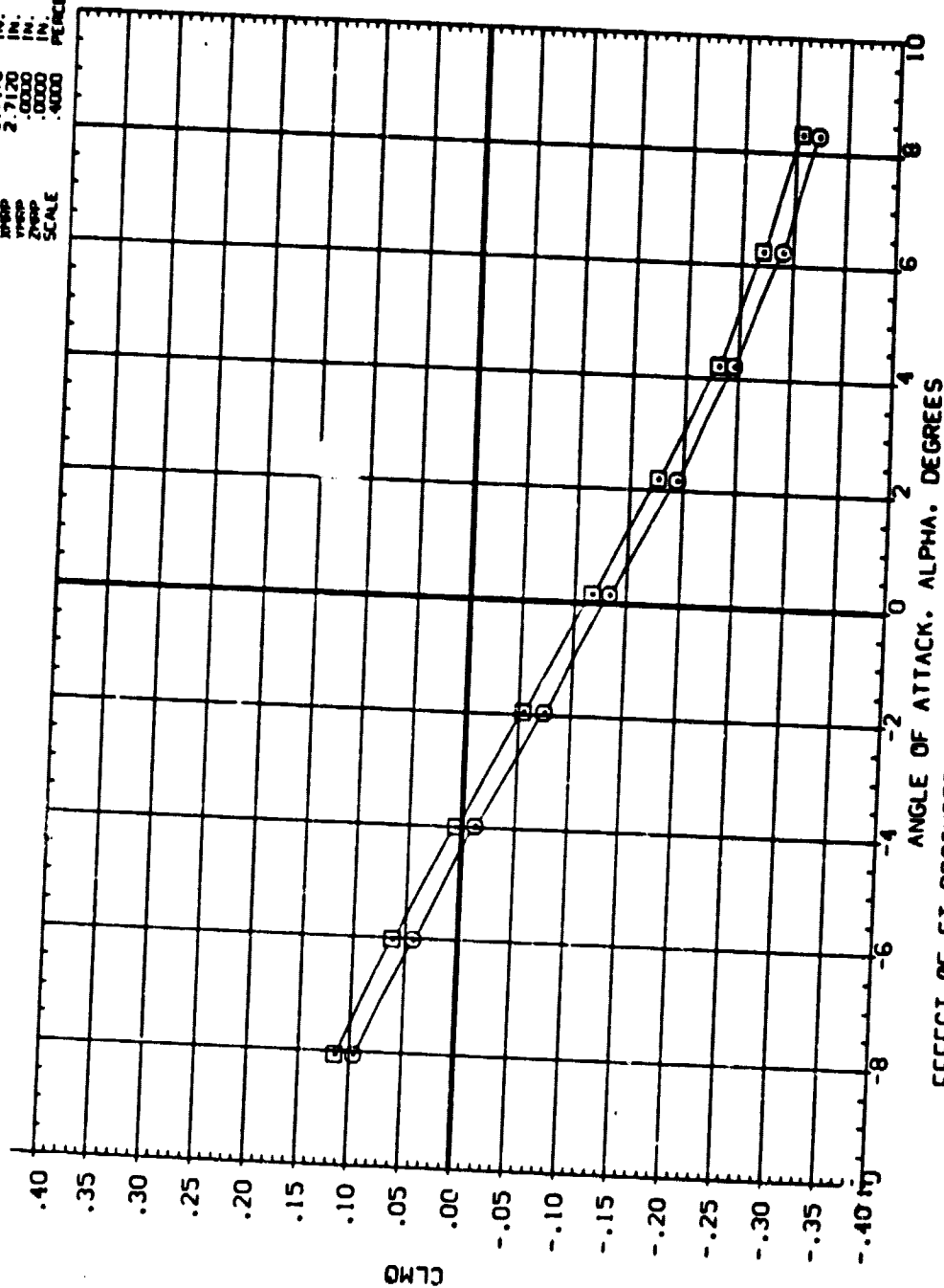


EFFECT OF ET PROTUBERANCES

(D)MACH = 1.05

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
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 (FA2808) FA28. MSC TVT 656. CONF IG. 02VZ2NPAAT1353

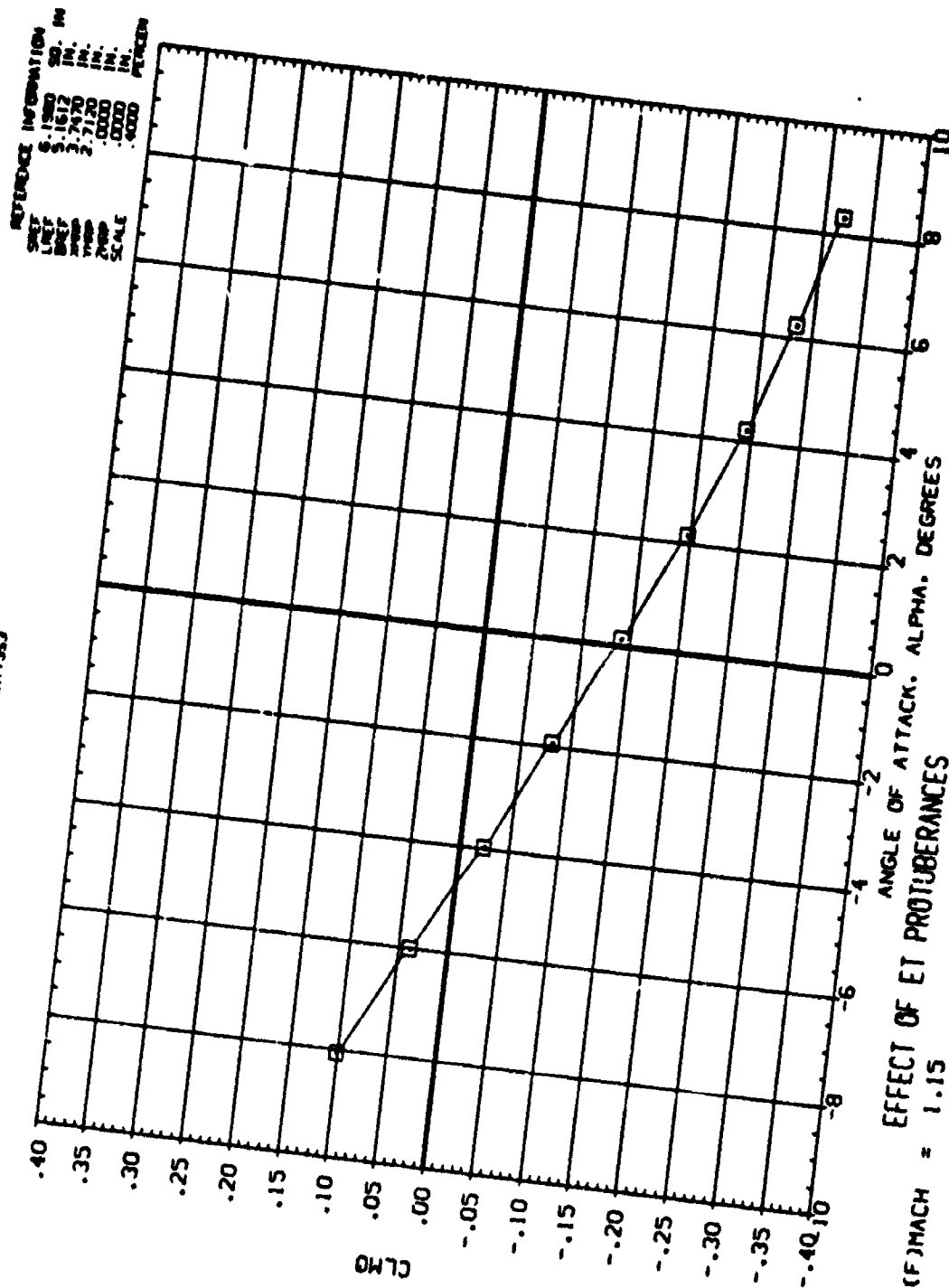
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 ZREF 2.7120 IN.
 SCALE 4000 PERCENT




EFFECT OF ET PROTUBERANCES

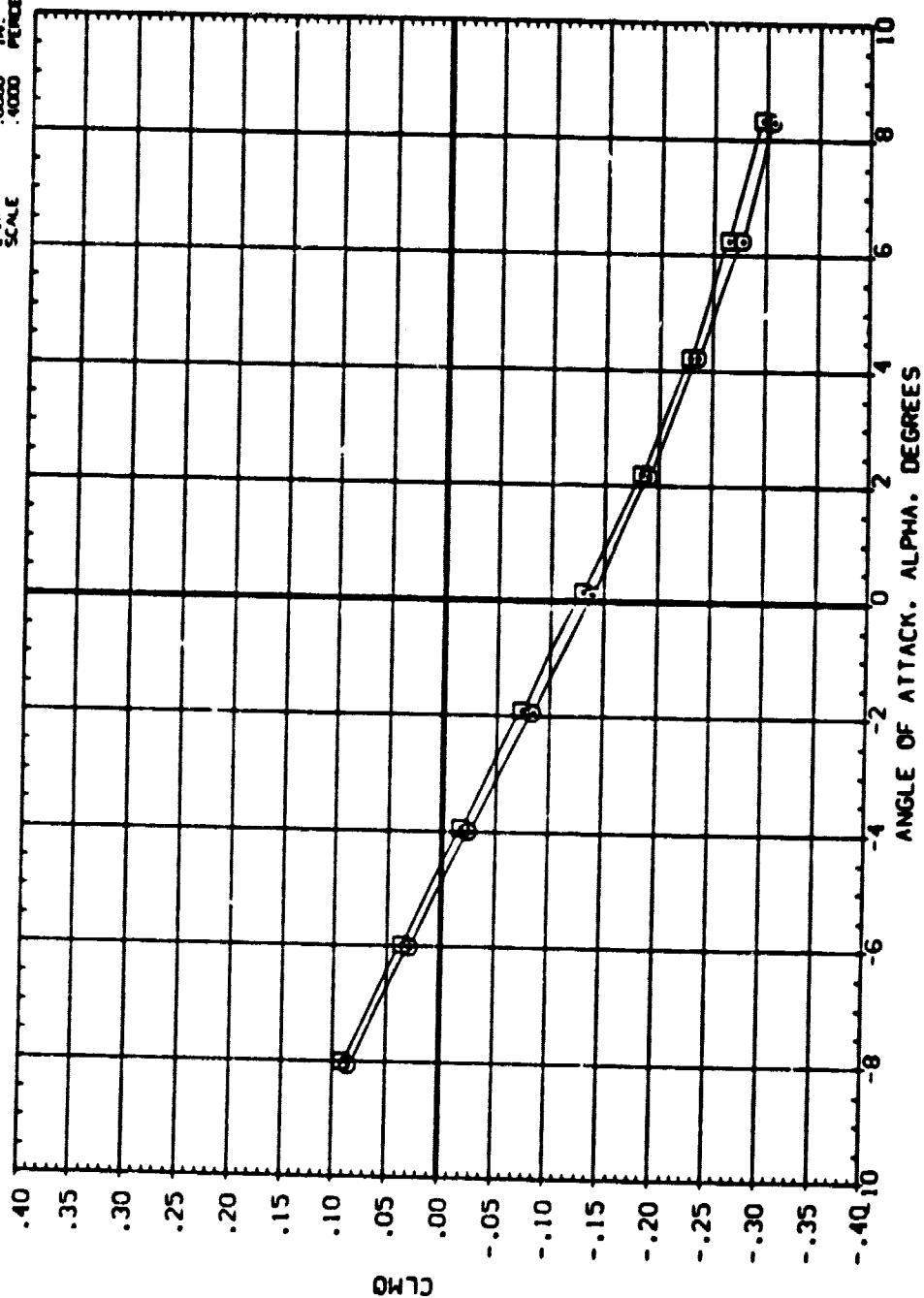
(E)MACH = 1.11

DATA SET SYMBOL: (FA2005)
 CONFIGURATION DESCRIPTION: DATA NOT AVAILABLE
 (FA2002) □ FA20. H5FC TWT 656, CONF 10. 00VZ2000A17353



DATA SET SYMBOL: (FA2005) (FA2008)  CONFIGURATION DESCRIPTION: FA20: MSFC TWT 656; CONF 10. 0202E20MAA1T353
FA20: MSFC TWT 656; CONF 10. 0202E20MAA1T353

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 3.1612 IN.
BREF 2.7470 IN.
VREF 2.7120 IN.
WREF .0000 IN.
SCALE .0000 PERCENT

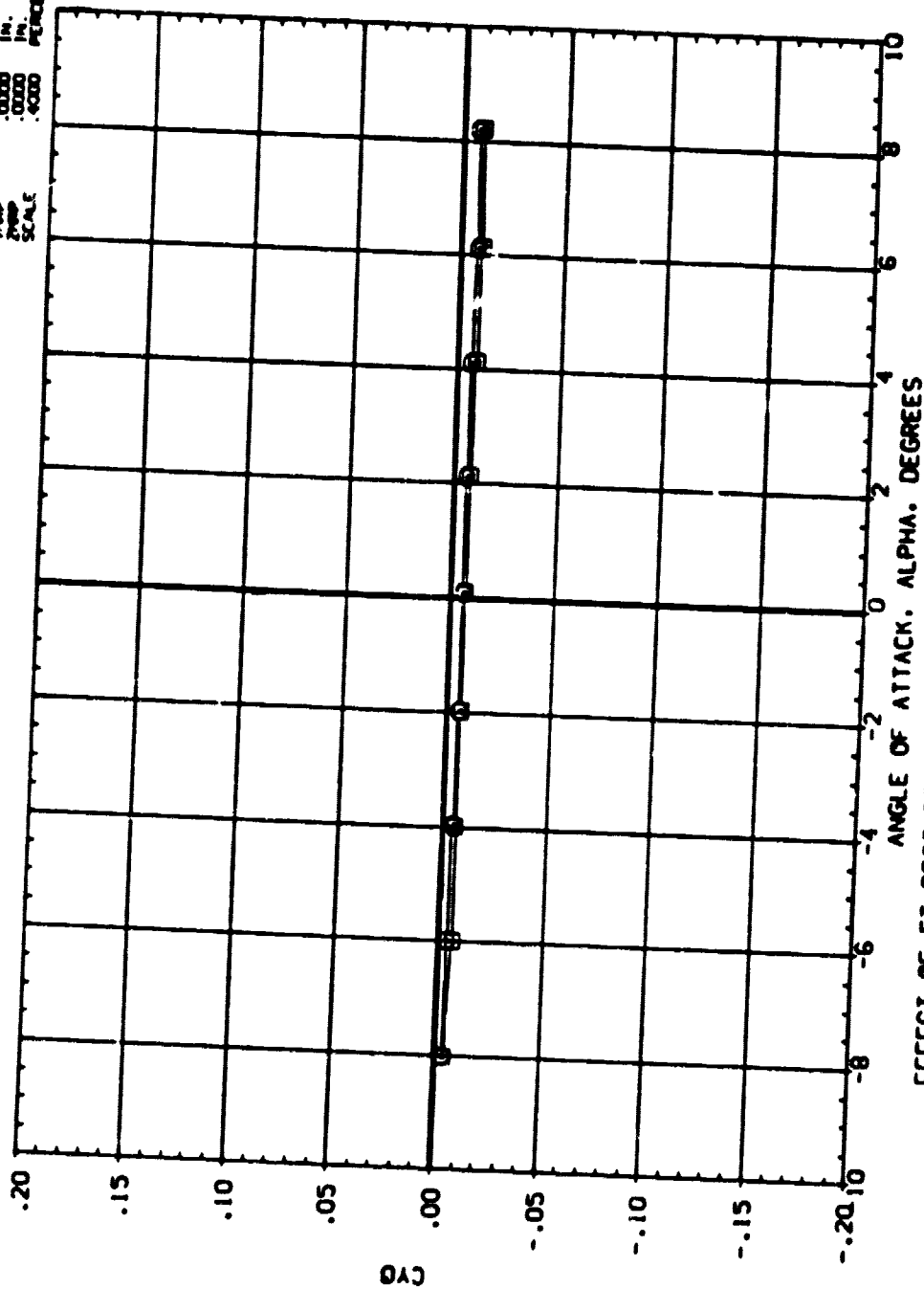


EFFECT OF ET PROTUBERANCES

(G)MACH = 1.25

DATA SET SYMBOL: ☐ CONFIGURATION DESCRIPTION:
 (PARAMS) 0 FA20: MISC TVT 65F: CNG10: CNG20: MACH11253
 (PARAMS) 0 FA20: MISC TVT 65F: CNG10: CNG20: MACH11253

REFERENCE INFORMATION
 SET 5.1500 30. IN
 LIFT 5.1512 10. IN
 DRIFT 3.7470 10. IN
 YAWP 2.7120 10. IN
 ZWOP .0000 10. IN
 SCALE .4000 PERCENT

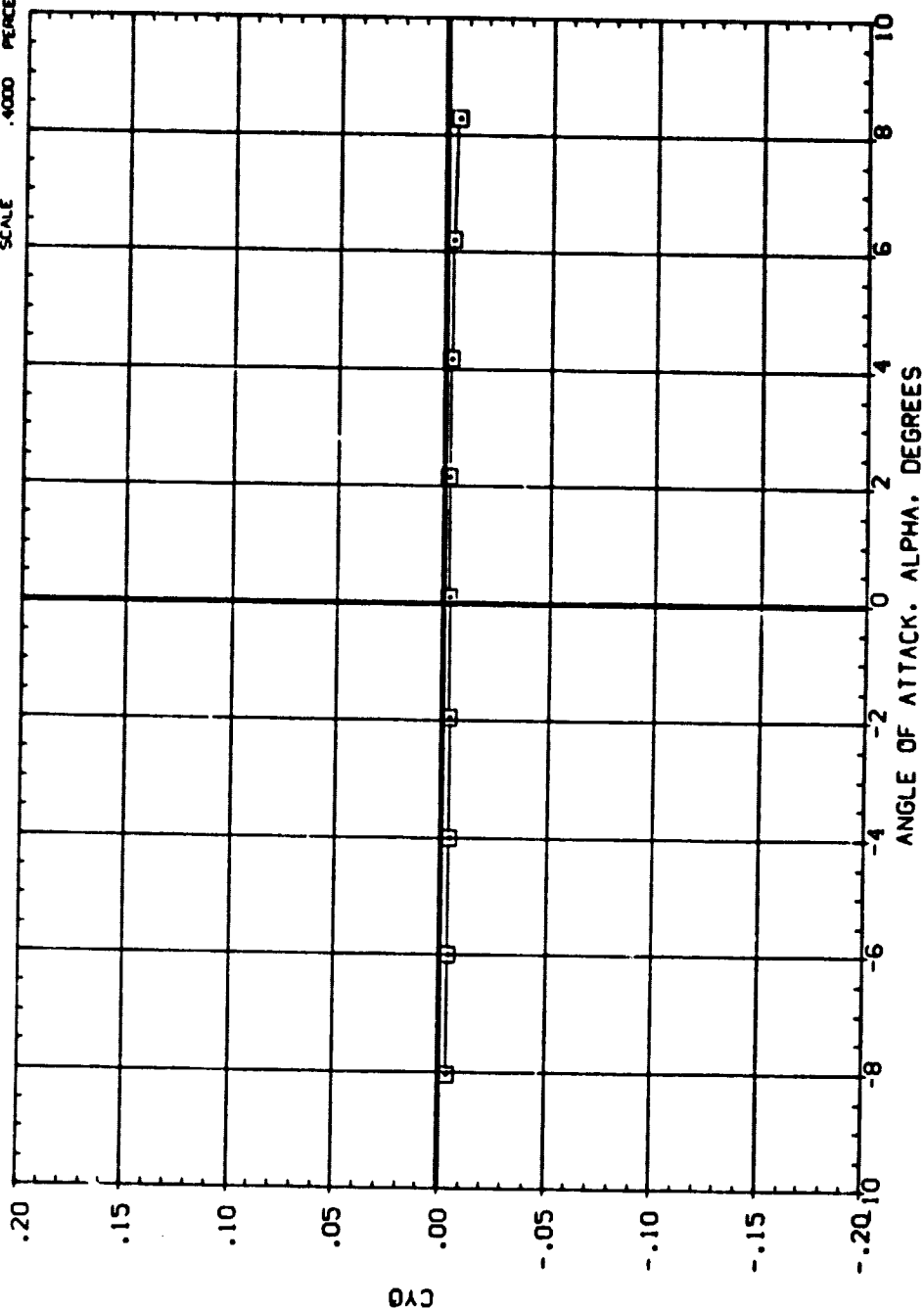


EFFECT OF ET PROTUBERANCES

(A) MACH = .60

DATA SET SYMBOL: **8** CONFIGURATION DESCRIPTION:
 (FA2805) DATA NOT AVAILABLE
 (FA2808) FA28. MSFC TWT 656. CONF IG. 02VZ22MPAAT1353

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

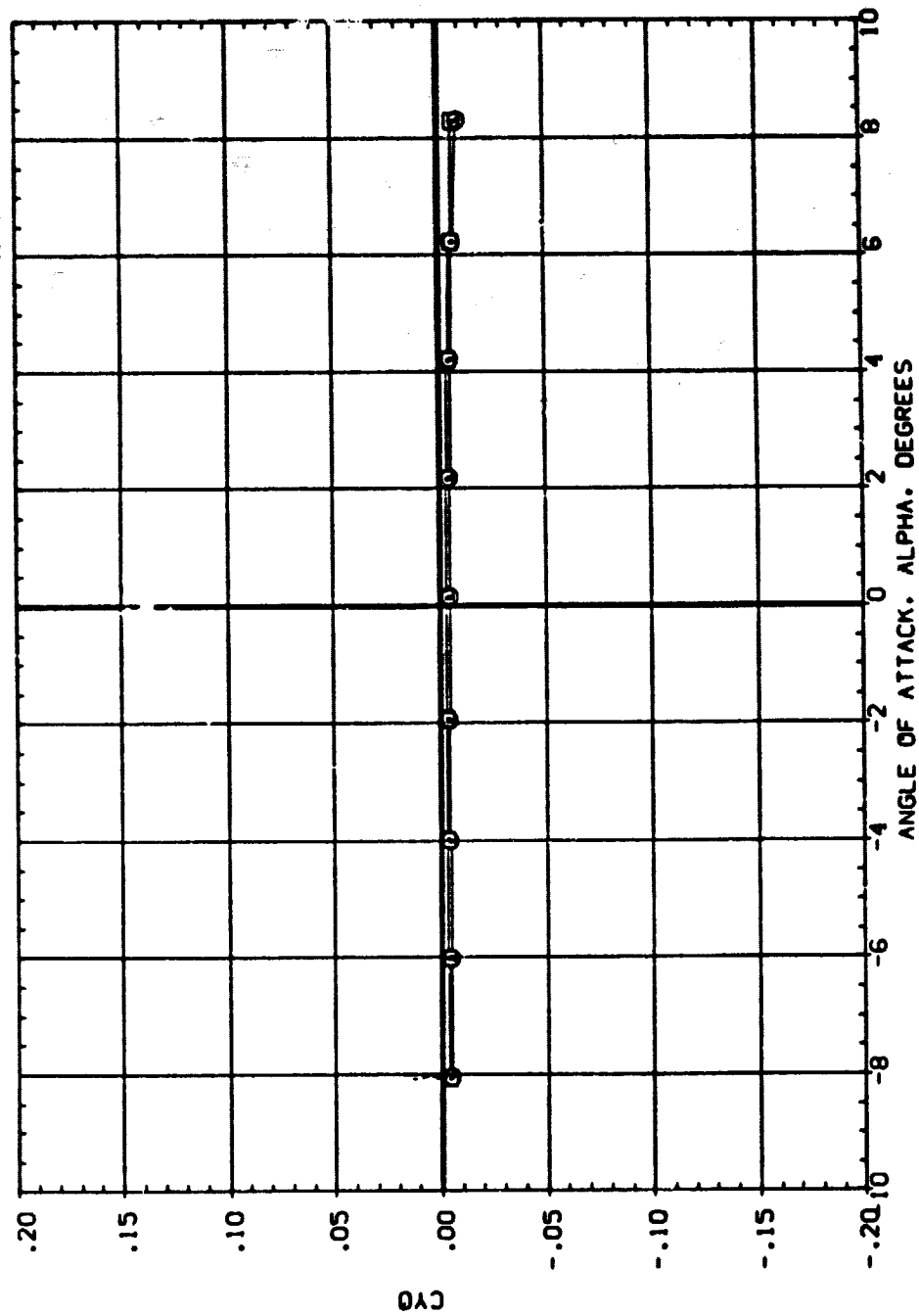


EFFECT OF ET PROTUBERANCES

(C)MACH = .95

DATA SET SYMBOL: ☐ (FA2805) ☐ (FA2808) CONFIGURATION DESCRIPTION: FA28: MSFC TVT 656. CONFIG: 02M2E20MATT1353 FA28: MSFC TVT 656. CONFIG: 02M2E20MATT1353

REFERENCE INFORMATION:
 REF 6.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 TREF 2.7120 IN.
 TREF 0.0000 IN.
 TREF 0.0000 IN.
 SCALE 1000 PERCENT



EFFECT OF ET PROTUBERANCES

(D)MACH = 1.05

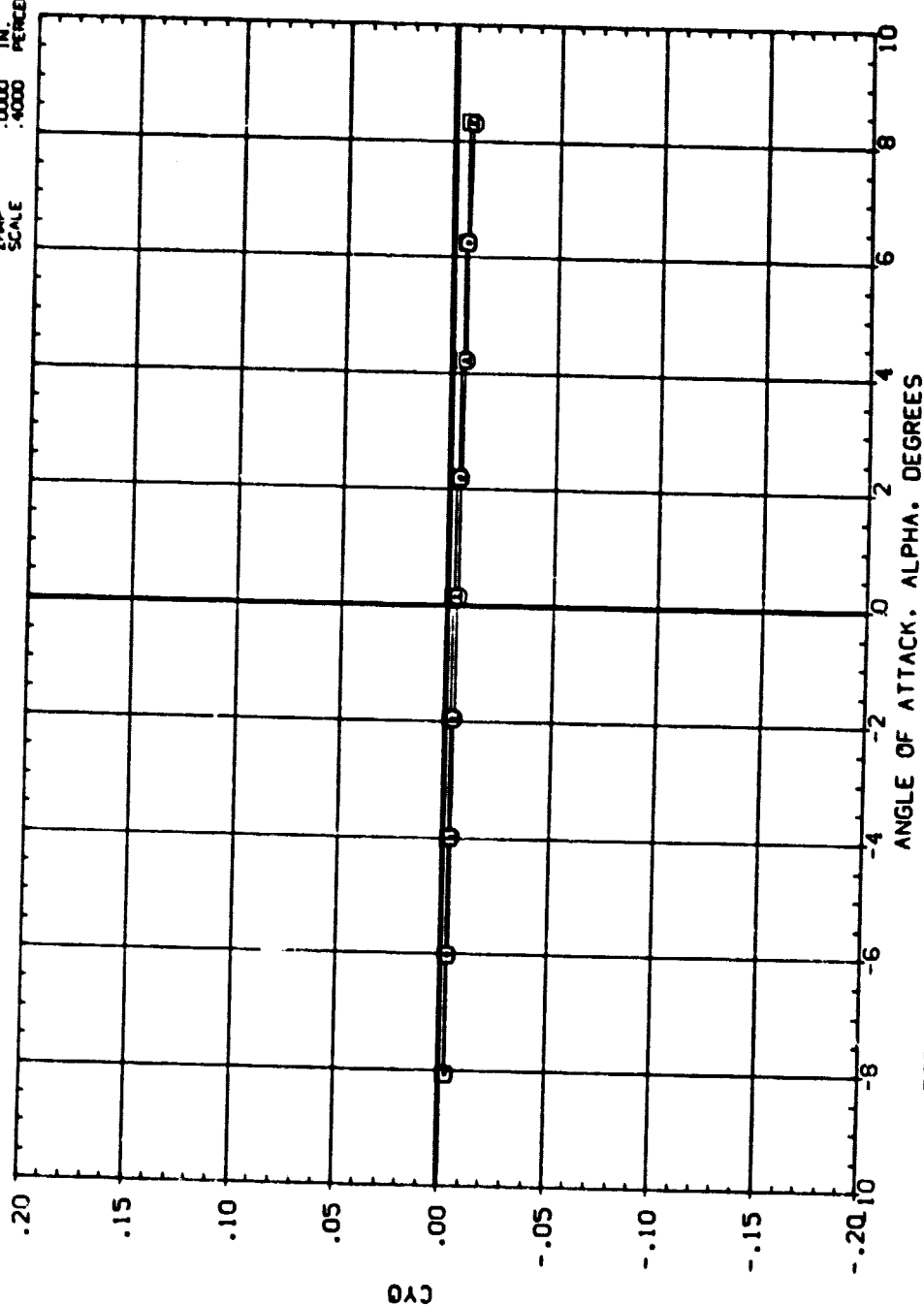
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DATA SET SYMBOL: 8
 (FA2805)
 (FA2808)

CONFIGURATION DESCRIPTION

FA28: MSFC TWT 656, CONF IG: 02VZ2PMAATT753
 FA28: MSFC TWT 656, CONF IG: 02VZ2PMAATT753

REFERENCE INFORMATION
 SREF 6.1880 50. IN
 LREF 3.1612 IN.
 BREF 3.7120 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

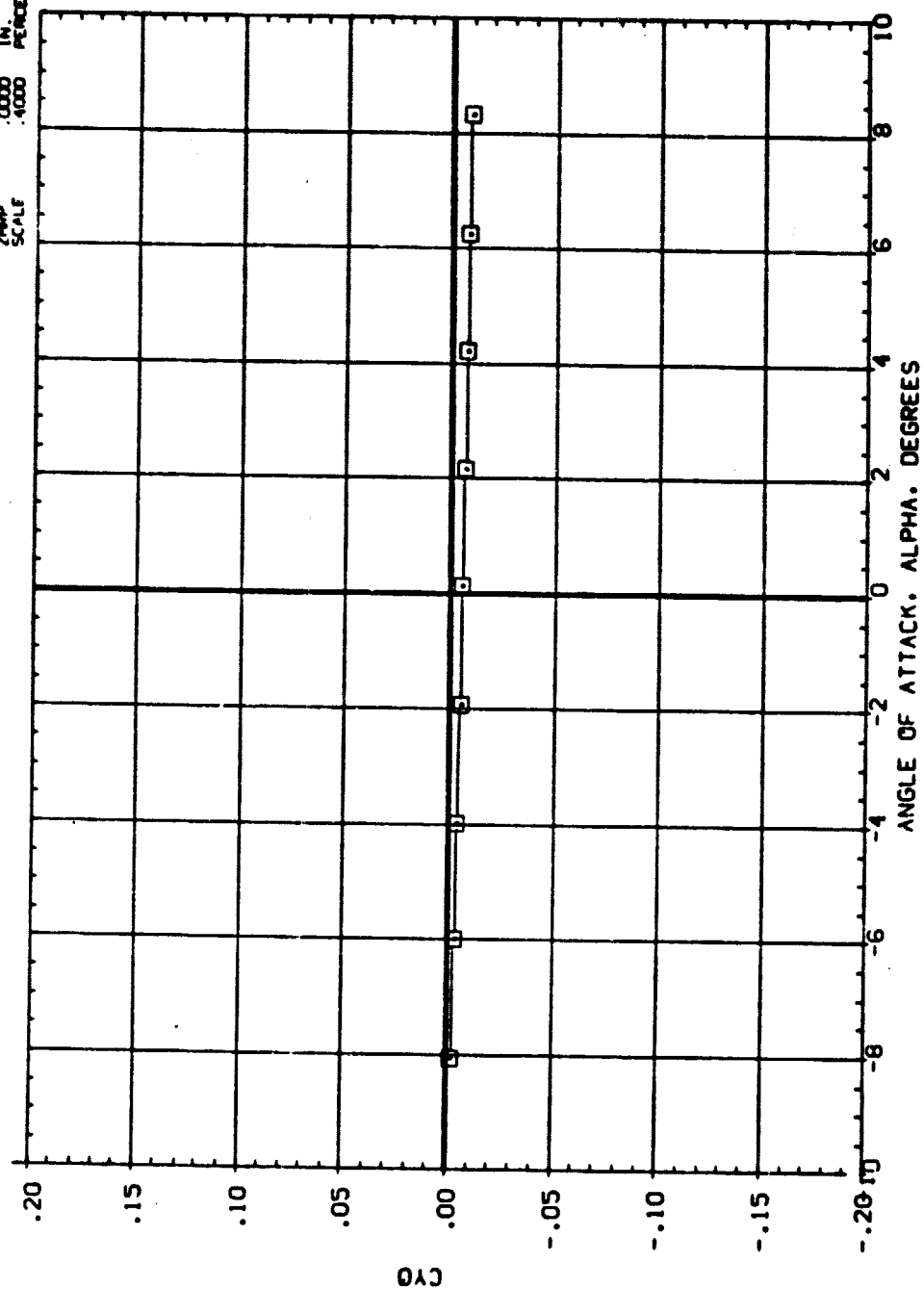


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.11

DATA SET SYMBOL: □ CONFIGURATION DESCRIPTION:
 (FA2805) DATA NOT AVAILABLE
 (FA2808) FA28, MSFC TWT 658, CONFIG. 0, .42PMATT353

REFERENCE INFORMATION
 SREF 6.1280 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 MREF 2.7120 IN.
 VREF .0300 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



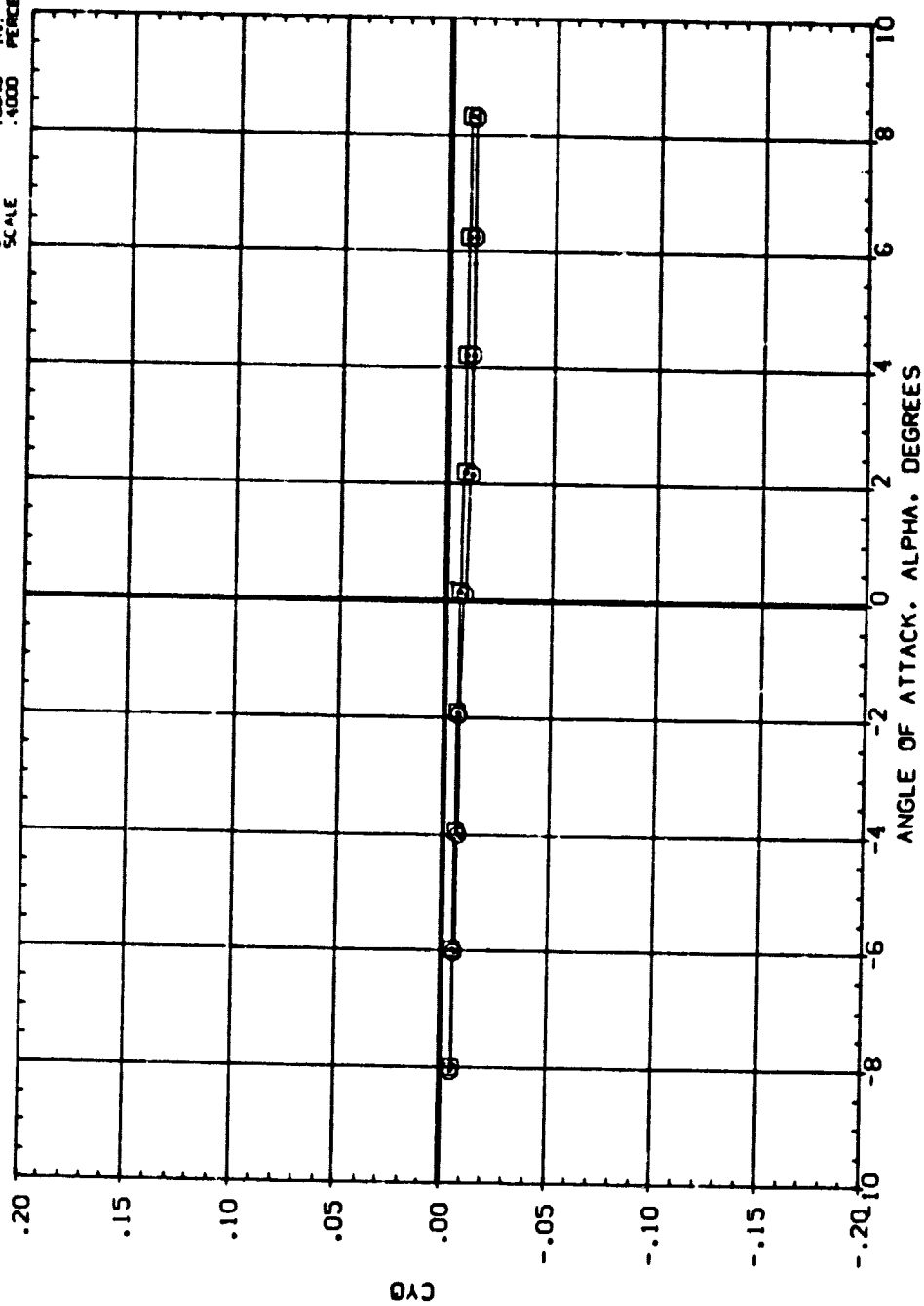
EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15

DATA SET SYMBOL CONFIGURATION DESCRIPTION


(FA2405) FA28. MSFC TWT 656. CONF IG. 02VZ2ZMHAAT1353
(FA2808) FA28. MSFC TWT 656. CONF IG. 02VZ2ZMHAAT1353

REFERENCE INFORMATION
SREF 6.1580 IN.
LREF 5.1612 IN.
BREF 3.7470 IN.
XMAP 2.7120 IN.
YMAP .0000 IN.
ZMAP .0070 IN.
SCALE .0000 PERCENT

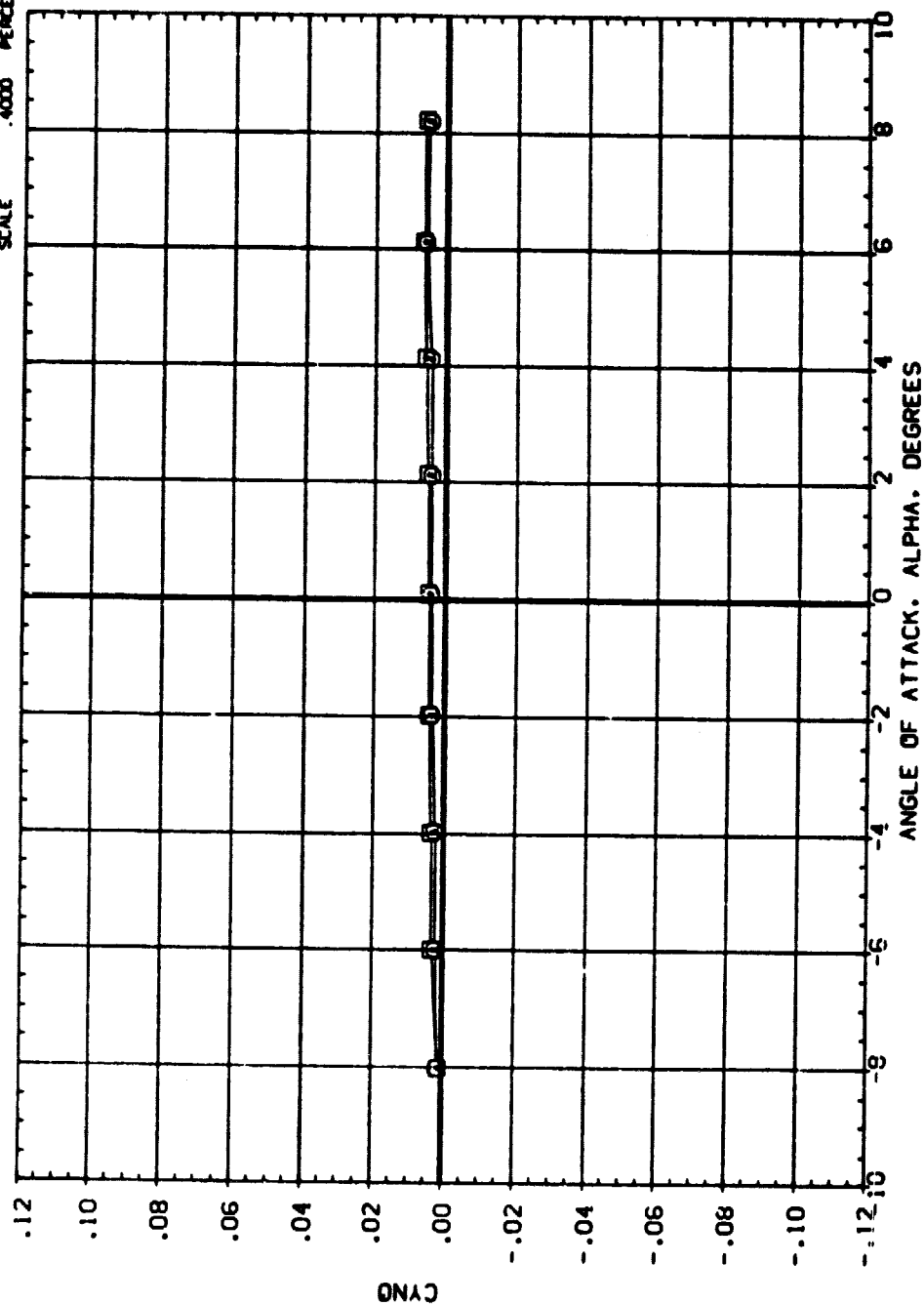


EFFECT OF ET PROTUBERANCES

(G)MACH = 1.25

DATA SET SYMBOL: (FA2805)  (FA2808)
 CONFIGURATION DESCRIPTION: FA28. MSFC TWT 656. CONF 16. 02NZE20NNA11353
 FA28. MSFC TWT 656. CONF 16. 02NZE20NNA11353

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XHP 2.7120 IN.
 YHP .0000 IN.
 ZHP .0000 IN.
 SCALE .0000 PERCENT

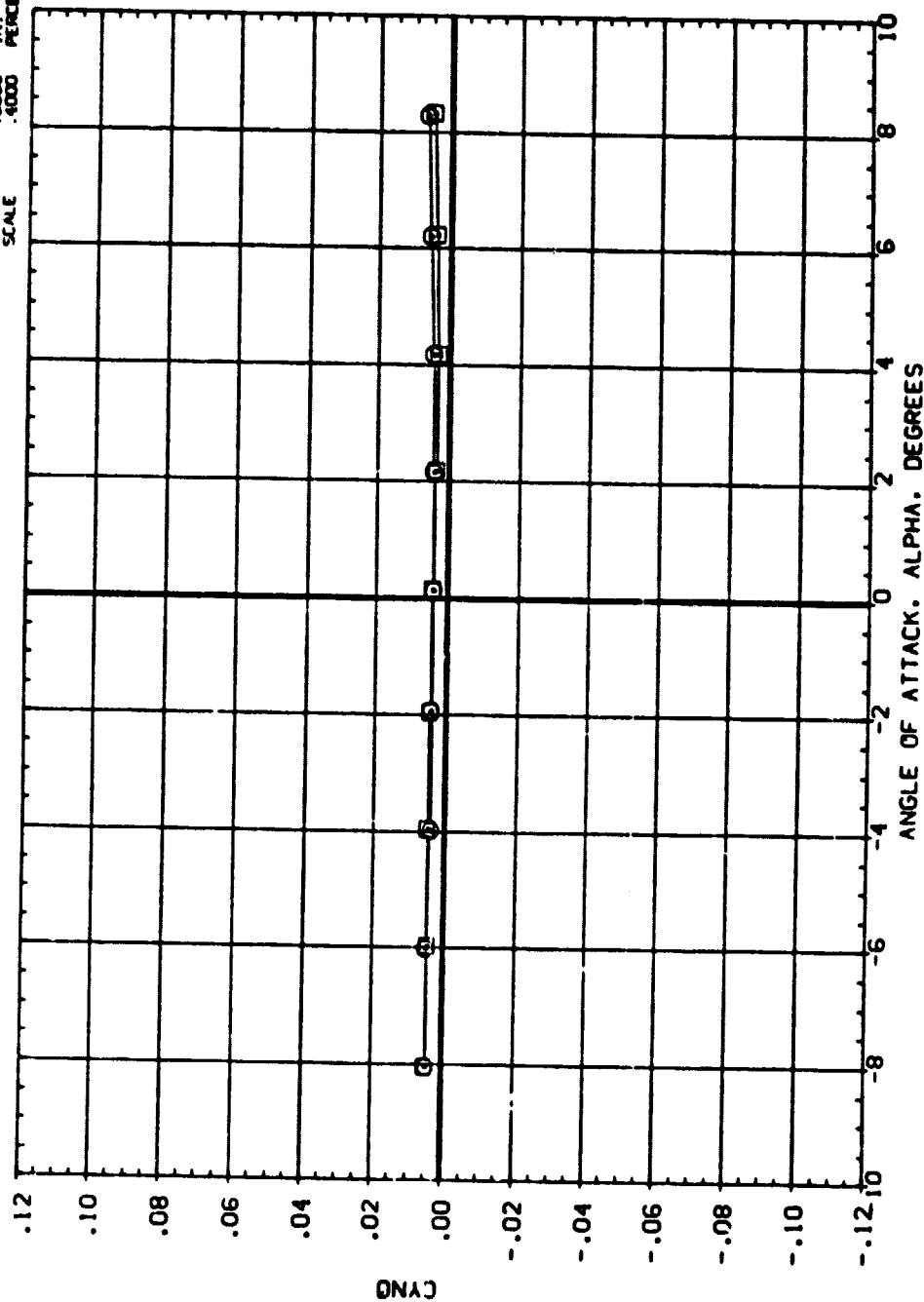


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: **8** CONFIGURATION DESCRIPTION:
 (FA2805) FA28. MSFC TWT 656. CONF IG. 02VZ24MAAT1353
 (FA2808) FA28. MSFC TWT 656. CONF IG. 02VZ24MAAT1353

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 MREF 2.7120 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

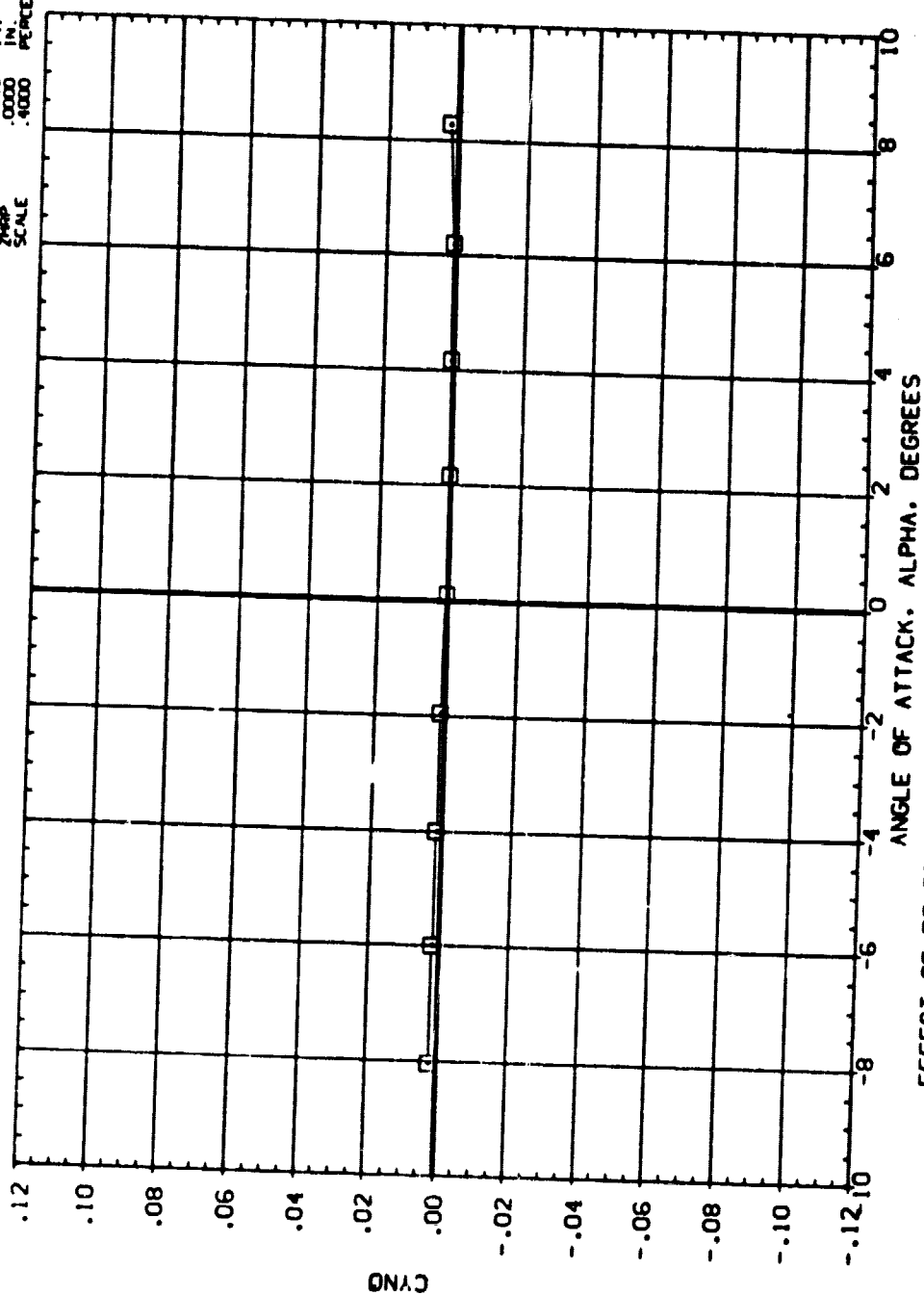


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2005) DATA NOT AVAILABLE
 (FA2008) 8 FA28. HSC 161 656. CONFIG. 00VZ2P0A11353

REFERENCE INFORMATION
 CREF 5.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

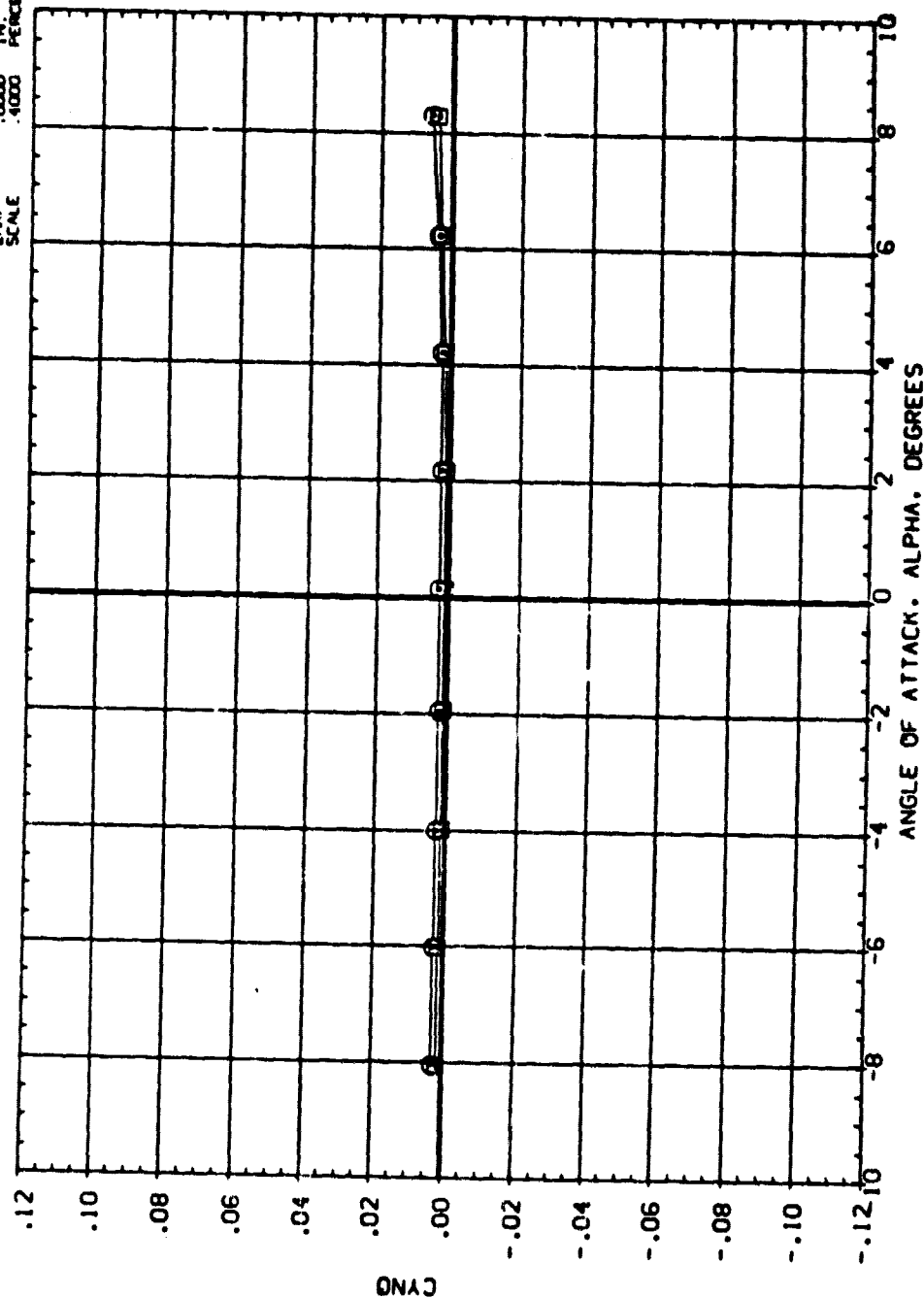


EFFECT OF ET PROTUBERANCES

(C)MACH = .95

DATA SET SYMBOL: B CONFIGURATION DESCRIPTION:
 (FA2005) FA2B. HSEC TVT 656. CONF IG. CONVEZ200AAT1353
 (FA2008) FA2B. HSEC TVT 656. CONF IG. CONVEZ200AAT1353

REFERENCE INFORMATION
 SREF 6.1800 SQ. IN.
 LREF 3.1612 IN.
 BREF 3.7170 IN.
 VREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE 4000 PERCENT

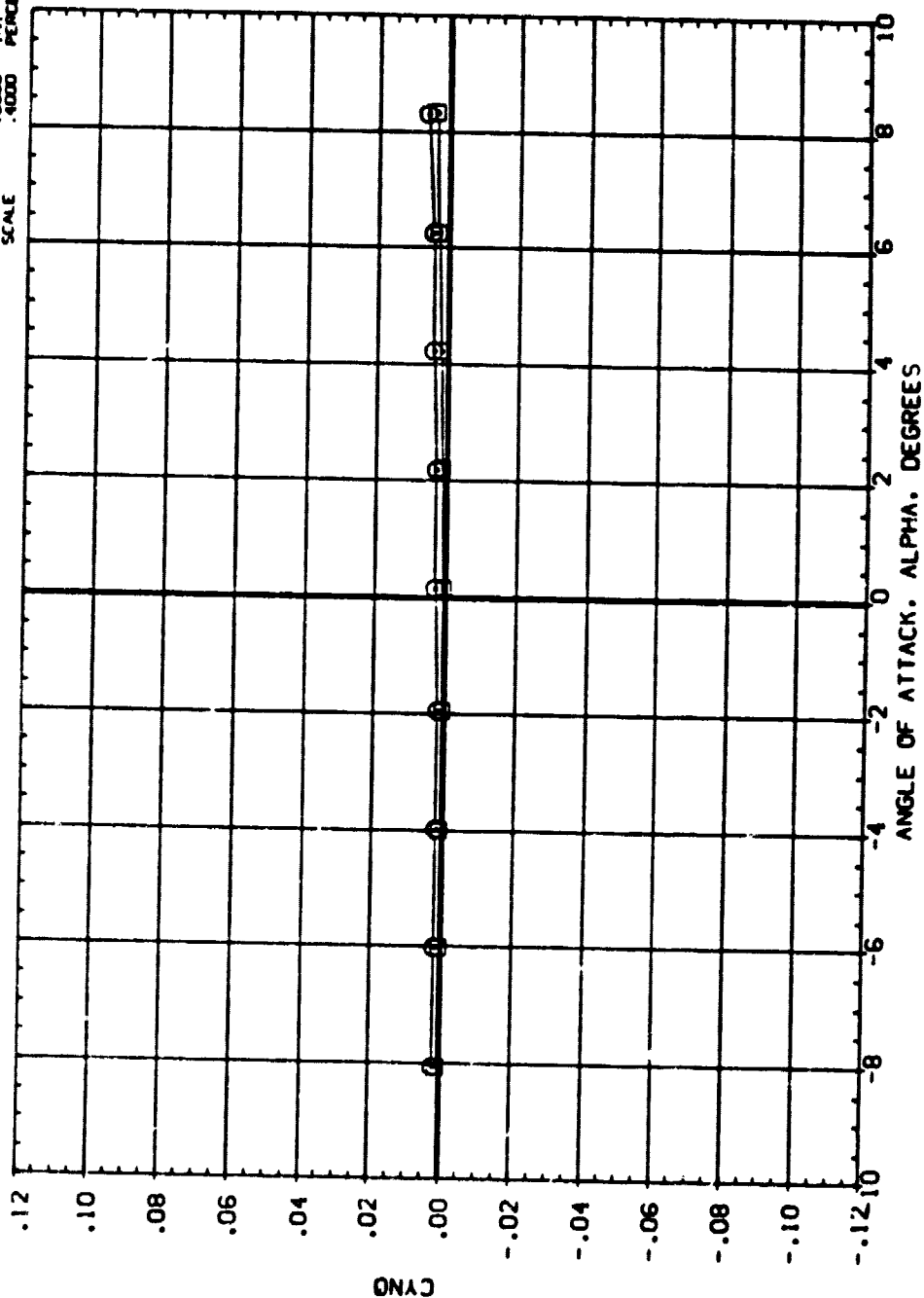


EFFECT OF ET PROTUBERANCES

(0)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2805) 8 FA28. HSC TWT 656. CONF 19. 02VZE20MAAT1353
 (FA2806) 8 FA28. HSC TWT 656. CONF 19. 02VZE20MAAT1353

REFERENCE INFORMATION
 SREF 6.1880 IN.
 LREF 3.1612 IN.
 BREF 2.7470 IN.
 WREF 2.7470 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



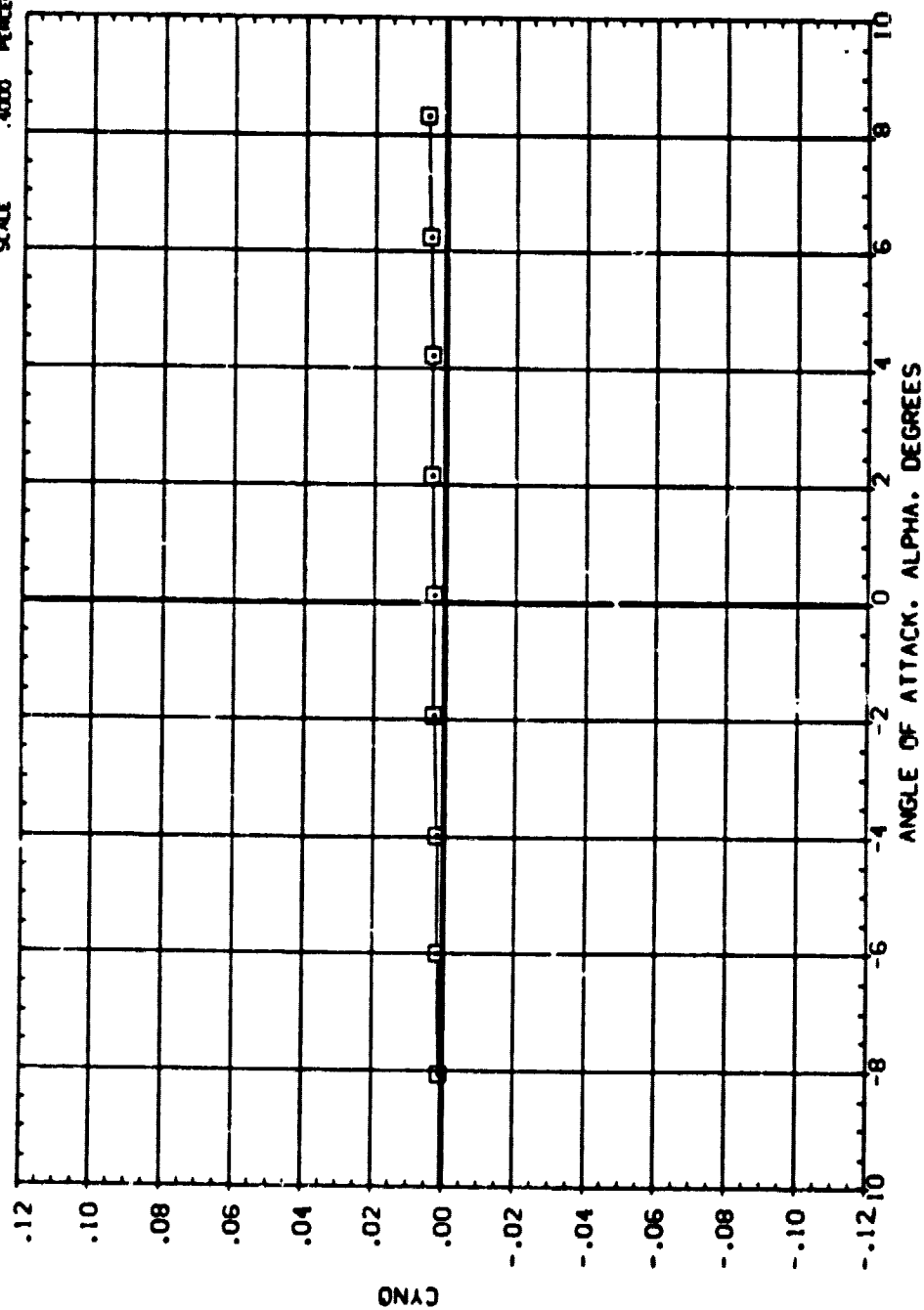
EFFECT OF ET PROTUBERANCES

(E)MACH = 1.11

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DATA SET: SYMBOL. CONFIGURATION DESCRIPTION
 (FA2805) DATA NOT AVAILABLE
 (FA2808) FA28. H5FC TWT 656. CONFIG. 02V2E2P0A17353

REFERENCE INFORMATION
 SREF 6.15ND 50. IN
 LREF 5.1617 IN.
 BREF 3.747C IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 SCALE .4000 PERCENT



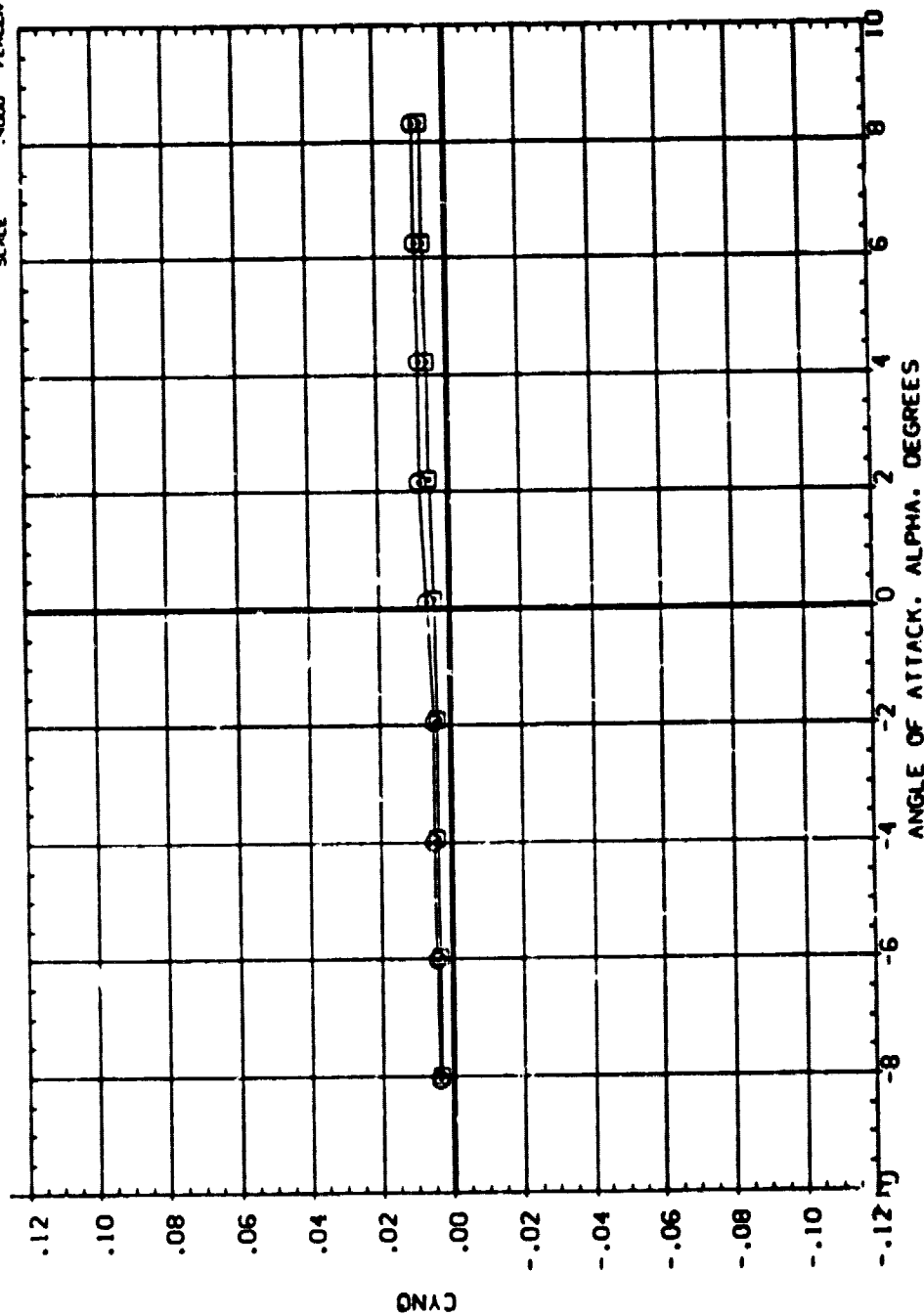
EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15

DATA SET SYMBOL: 8
 (FA2001) FA2001
 (FA2001) FA2001

CONFIGURATION DESCRIPTION
 FA2001 MFC TWT 556: CONFIG. 02N2Z200MAAT1253
 FA2001 MFC TWT 556: CONFIG. 02N2Z200MAAT1253

REFERENCE INFORMATION
 SHEET 6.1980 SQ. IN.
 LINE 5.1612 IN.
 BLOC 3.7470 IN.
 PROP 2.7120 IN.
 TWT 0.0000 IN.
 ZWAP 0.0000 IN.
 SCALE .4000 PERCENT

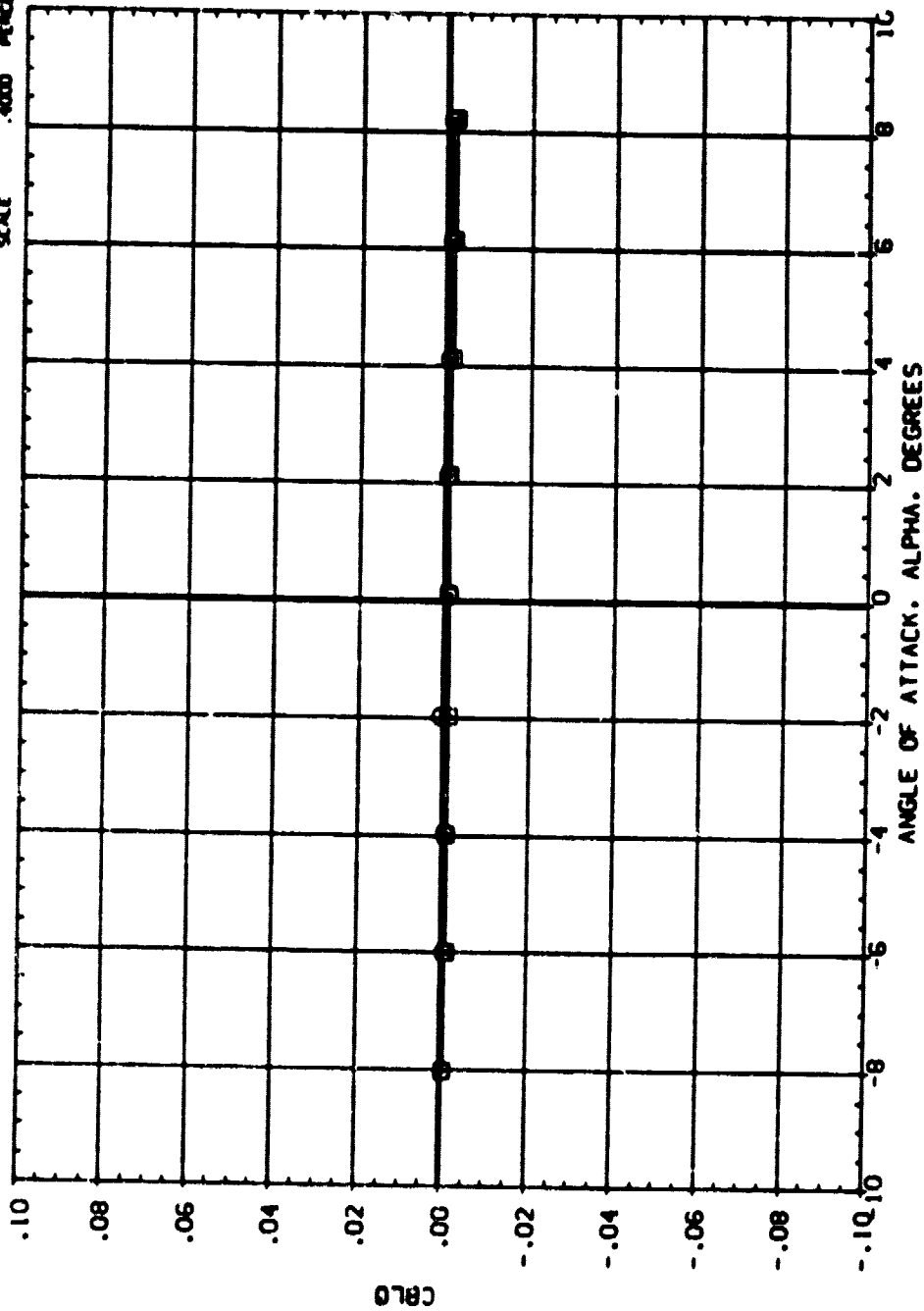


EFFECT OF ET PROTUBERANCES

(G)MACH = 1.25

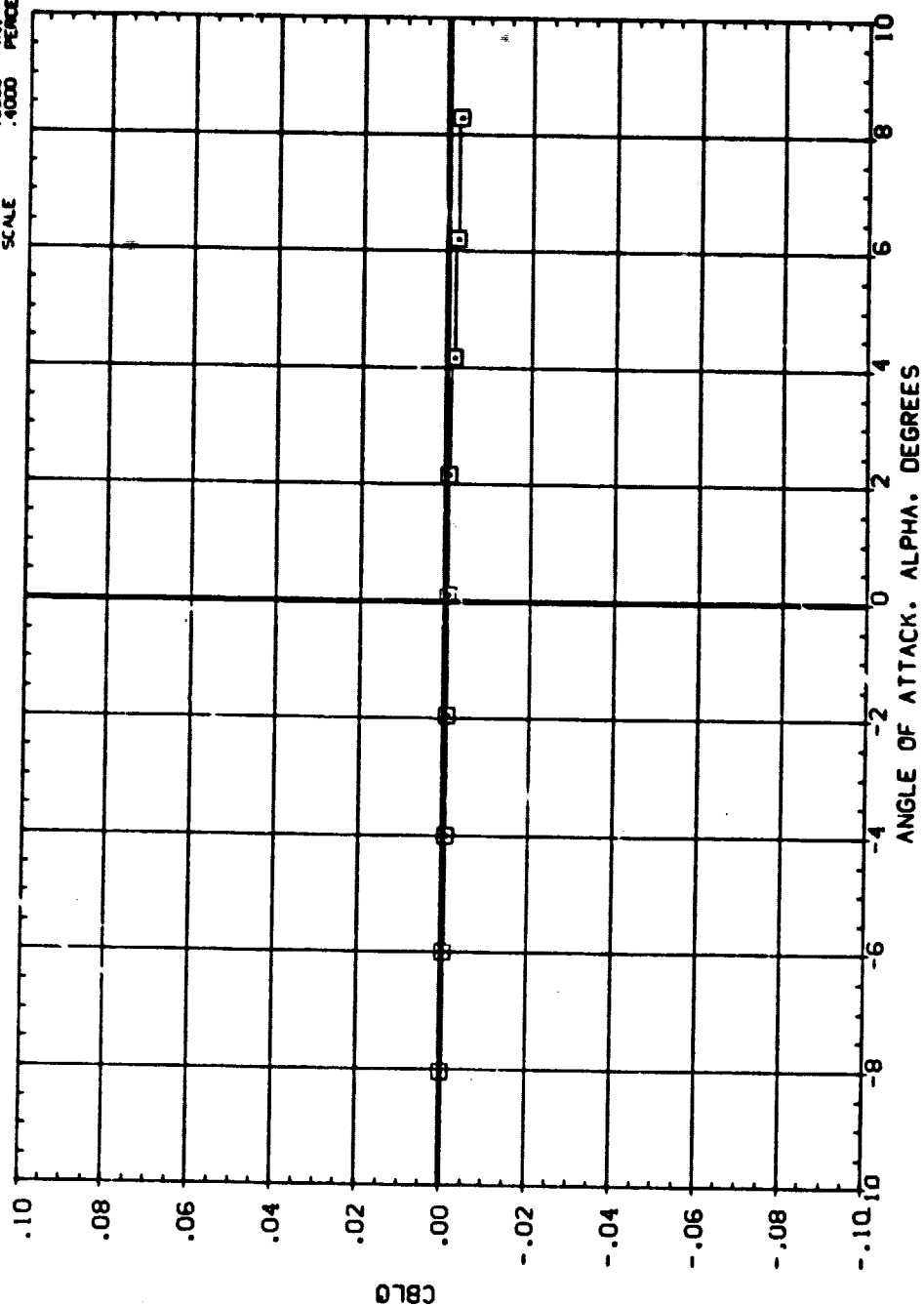
DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2805) □ FA28: MSC TWT 626: CONF IG: 02VZ220MAAT123
 (FA2808) □ FA28: MSC TWT 626: CONF IG: 02VZ220MAAT153

REFERENCE INFORMATION
 DATE: 8-1980 30: 14
 NAME: 3-1612 14:
 SPEC: 3-1470 14:
 TEMP: 2-7120 14:
 UNIT: .0000 14:
 SCALE: .0000 14:
 PERCENT: .0000 14:
 SCALE: .0000 14:
 PERCENT: .0000 14:



DATA SET SYMBOL: ☐ CONFIGURATION DESCRIPTION: DATA NOT AVAILABLE
 (FA2805) (FA2808) FA28. MSC TWT 656. CONFIG. 02VZEPNPAATT353

REFERENCE INFORMATION:
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

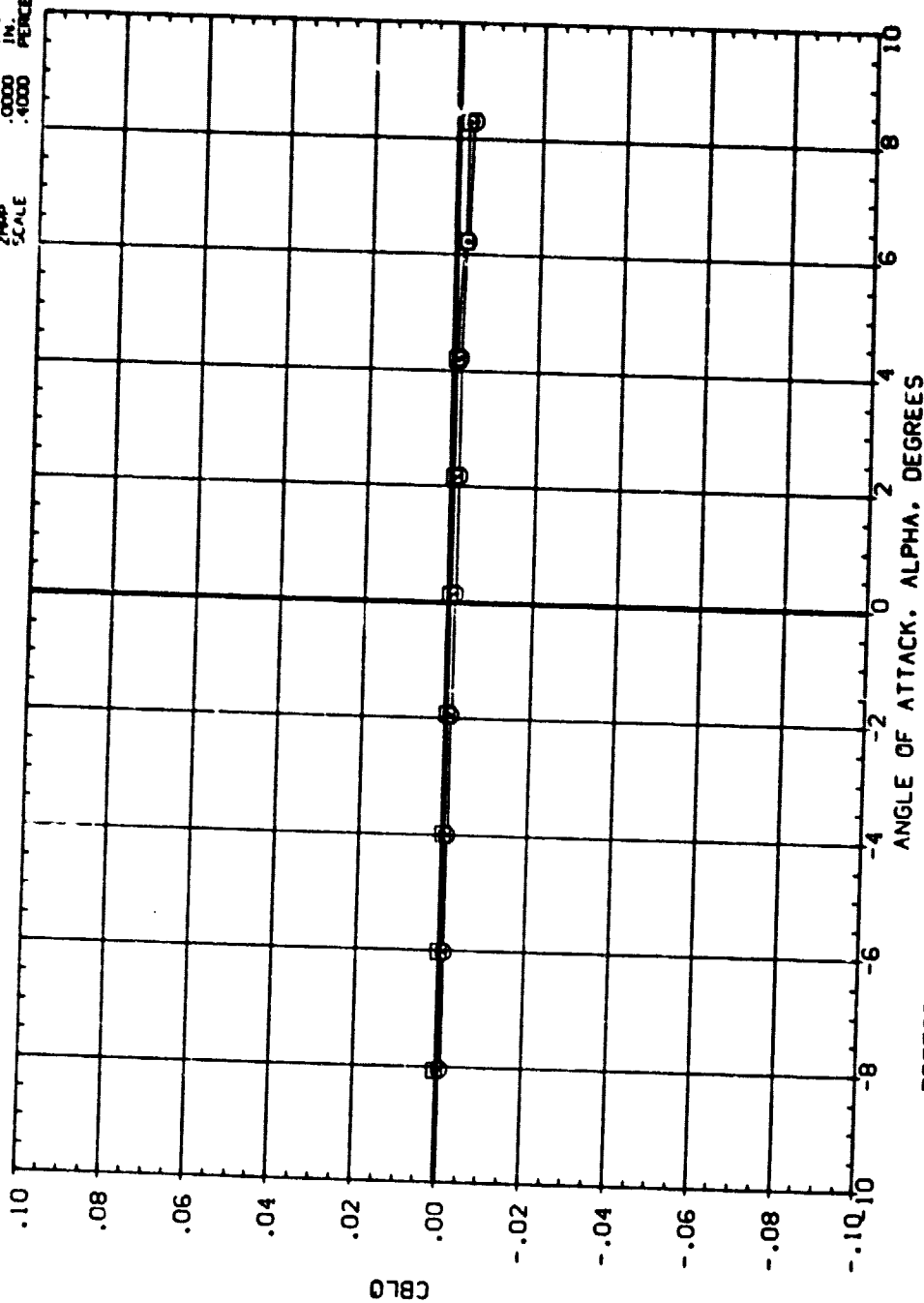


EFFECT OF ET PROTUBERANCES

(C)MACH = .95

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2005) FA28. MSFC TVT 656. CONF IG. 02VZL2PAPATTJ53
 (FA2008) FA28. MSFC TVT 656. CONF IG. 02VZL2PAPATTJ53

REFERENCE INFORMATION
 SREF 6.1980 30. IN
 LREF 5.1612 IN.
 GREF 3.1970 IN.
 VREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

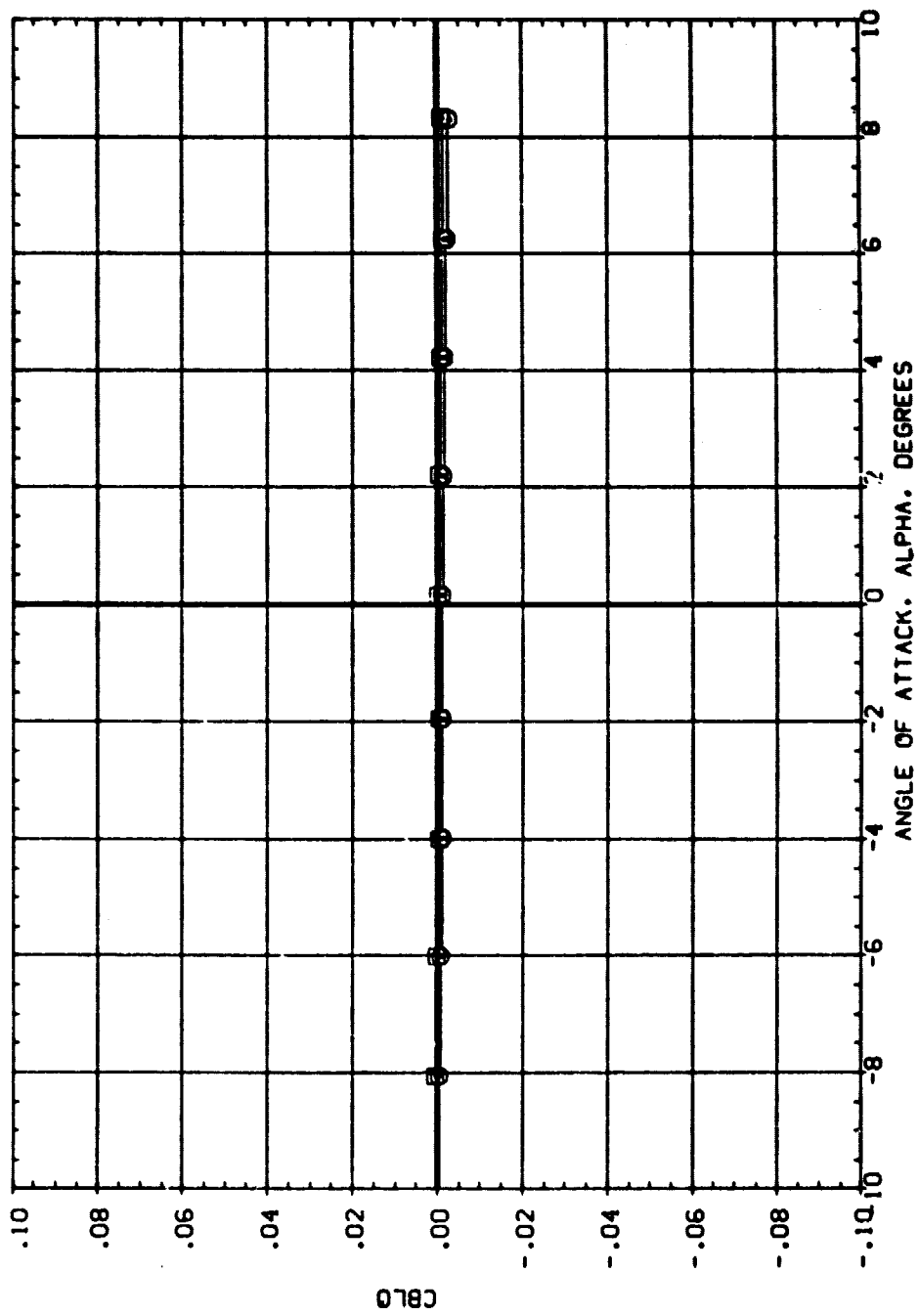


EFFECT OF ET PROTUBERANCES

(D)MACH = 1.05

DATA SET SYMBOL: 8
 (FA2805) (FA2808)
 CONFIGURATION DESCRIPTION:
 FA28. MSFC TWT 556. CONF 1G. 02NZE2ANVAAT1353
 FA28. MSFC TWT 556. CONF 1G. 02NZE2ANVAAT1353

REFERENCE INFORMATION:
 SREF 5.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF 0.0000 IN.
 ZREF 0.0000 IN.
 SCALE .4000 PERCENT



EFFECT OF ET PROTUBERANCES

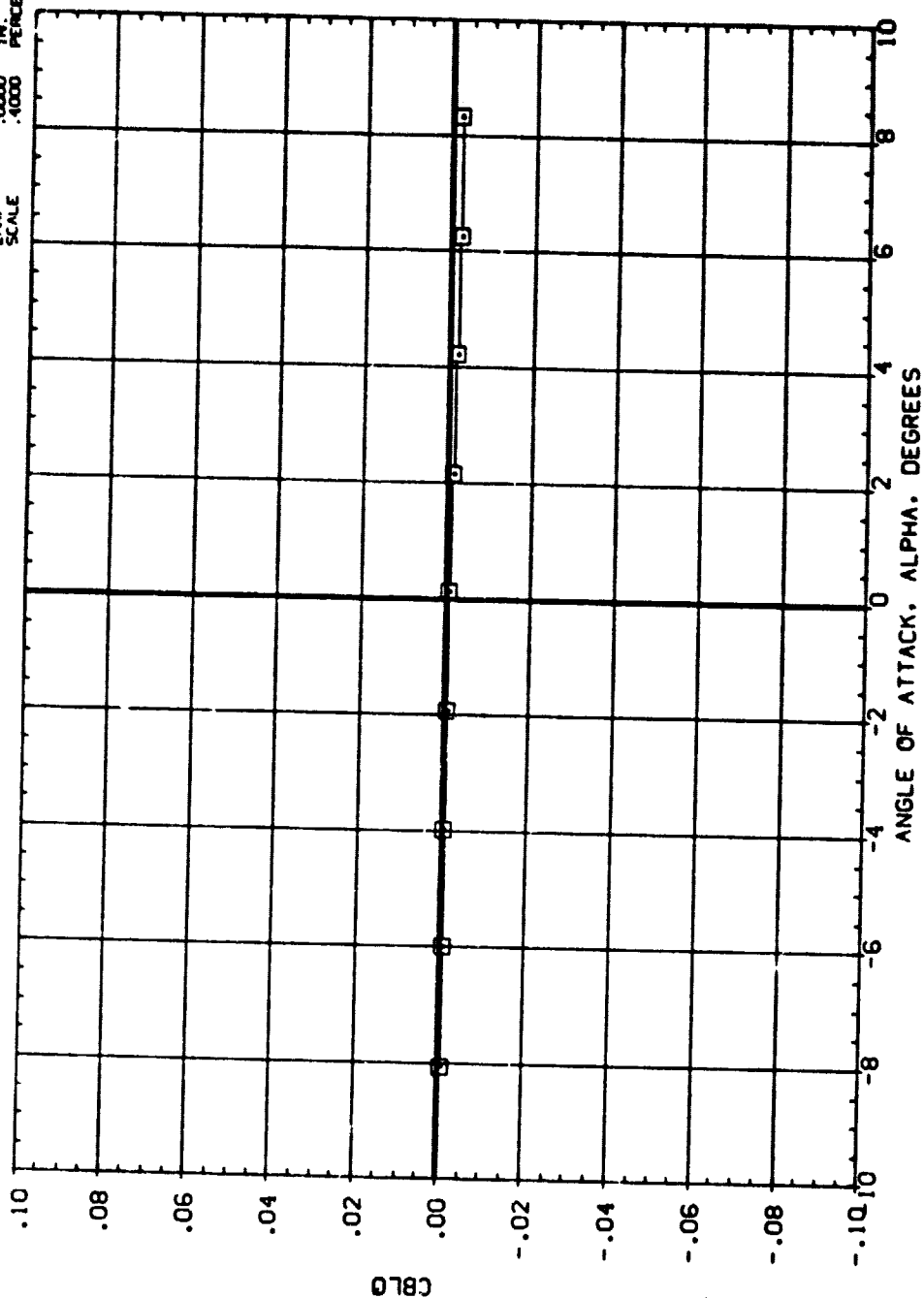
(E)MACH = 1.11

DATA SET SYMBOL: 8
 (FA2805)
 (FA2808)

CONFIGURATION DESCRIPTION
 DATA NOT AVAILABLE

FA28. MSFC TWT 656. CONF IG. 0242E2MPAA17353

REFERENCE INFORMATION
 SREF 6.1890 90. IN
 LREF 3.1612 IN.
 BREF 2.7170 IN.
 AREF 2.7170 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

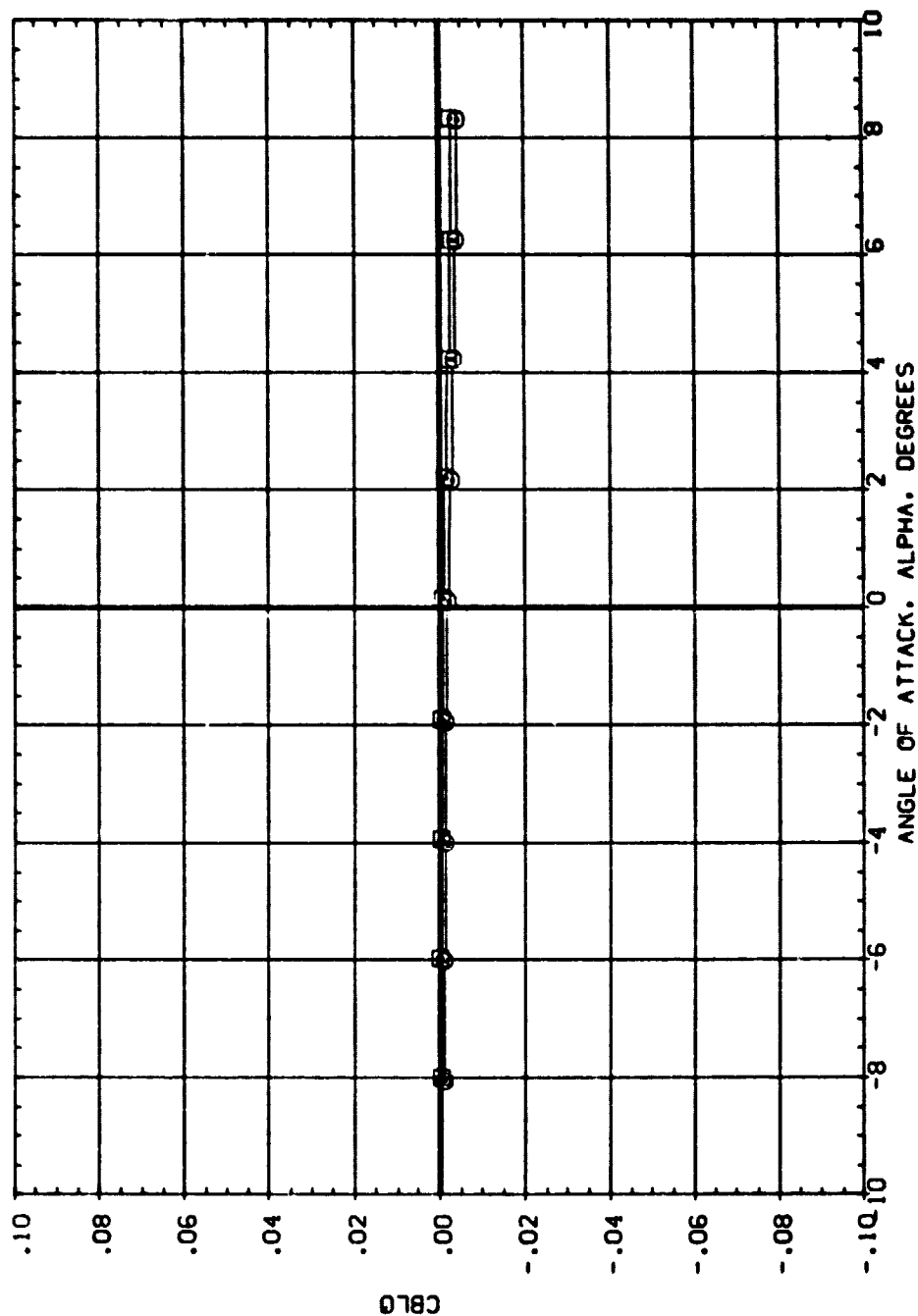


EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15

DATA SET SYMBOL: (FA2805) ☐ (FA2808) ☐ CONFIGURATION DESCRIPTION: FA28: MSCC INT 656. CONF IG. 02V2E2MMAATT353
FA38: MSCC INT 656. CONF IG. 02V2E2MMAATT353

REFERENCE INFORMATION
SREF: 6.1500 90. IN
LREF: 5.1612 IN.
BREF: 3.7470 IN.
XREF: 2.7120 IN.
YREF: .0000 IN.
ZREF: .0000 IN.
SCALE: .0000 PERCENT

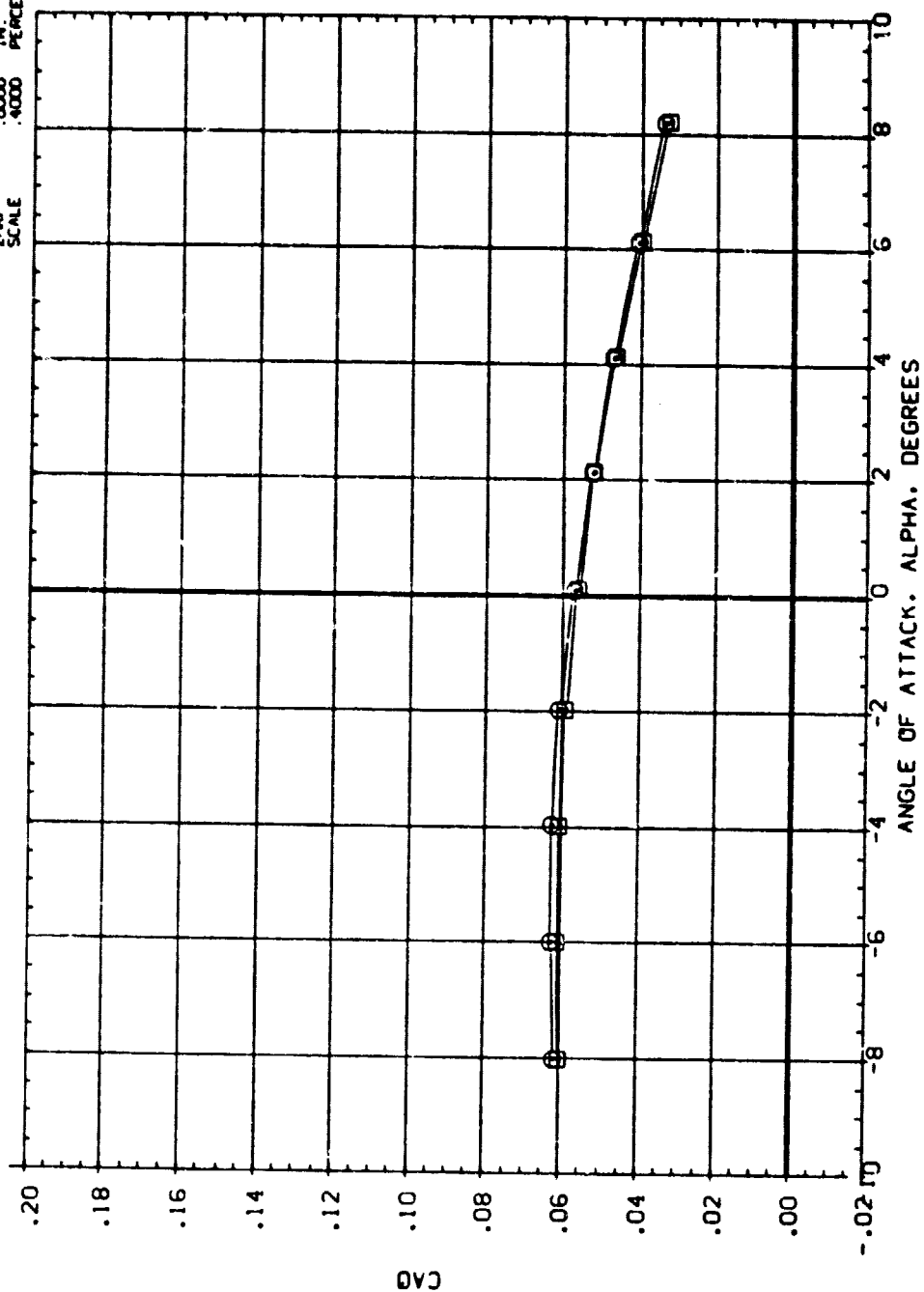


EFFECT OF ET PROTUBERANCES

(G)MACH = 1.25

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION:
 FA28: MSC INT 656. CONF IG. 02V2E20NNAATT353
 FA28: MSC INT 656. CONF IG. 02V2E24PAATT353

REFERENCE INFORMATION
 SREF 6.1280 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 XREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

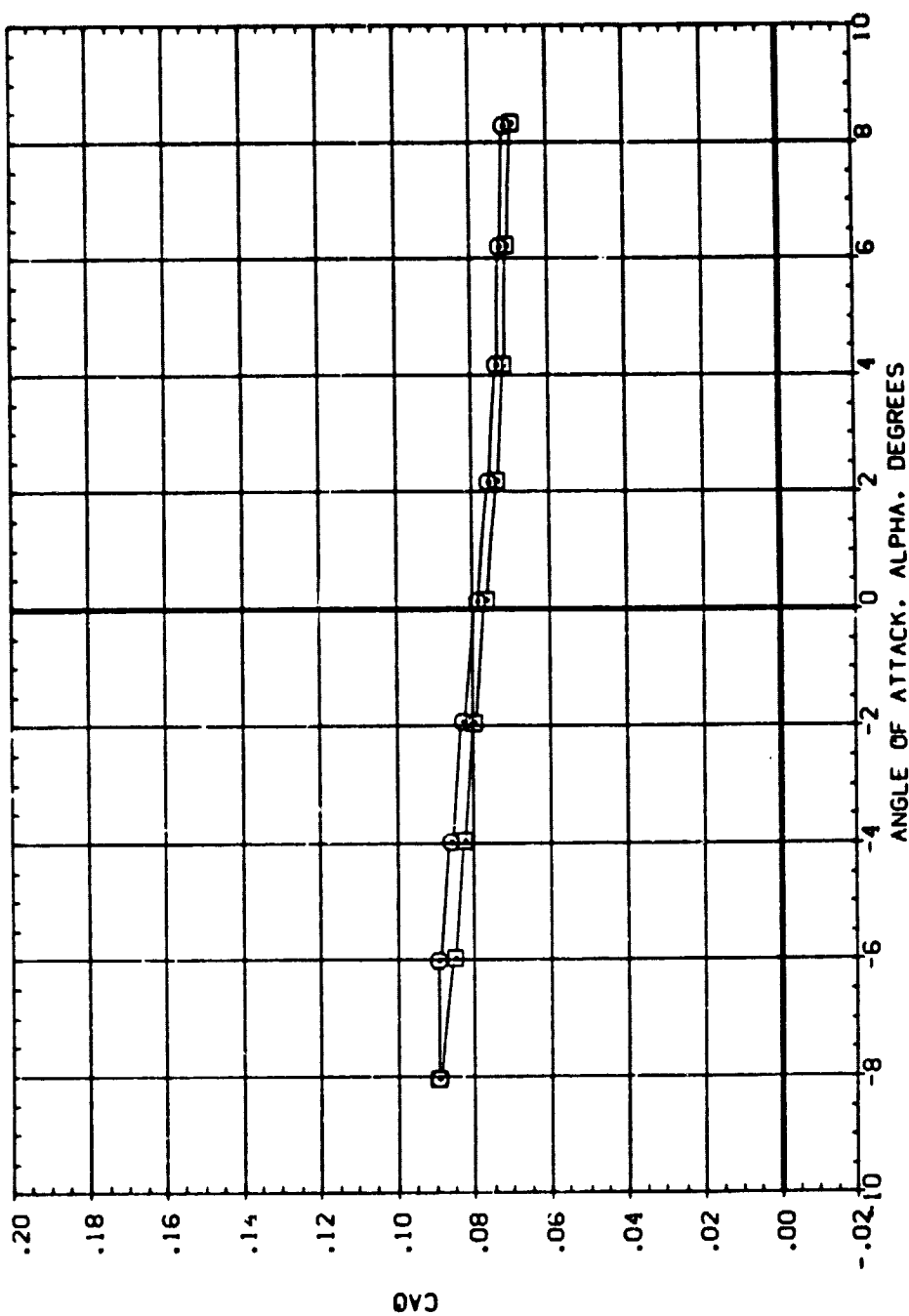


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: B
 (FA2805) (FA2808)
 CONFIGURATION DESCRIPTION:
 FA28: MSFC TWT 656. CONF 15: 02N2E20NPAAT1353
 FA28: MSFC TWT 656. CONF 16: 02N2E20NPAAT1353

REFERENCE INFORMATION:
 SREF: 6.1960 50. IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 MREF: 2.7120 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .4000 PERCENT

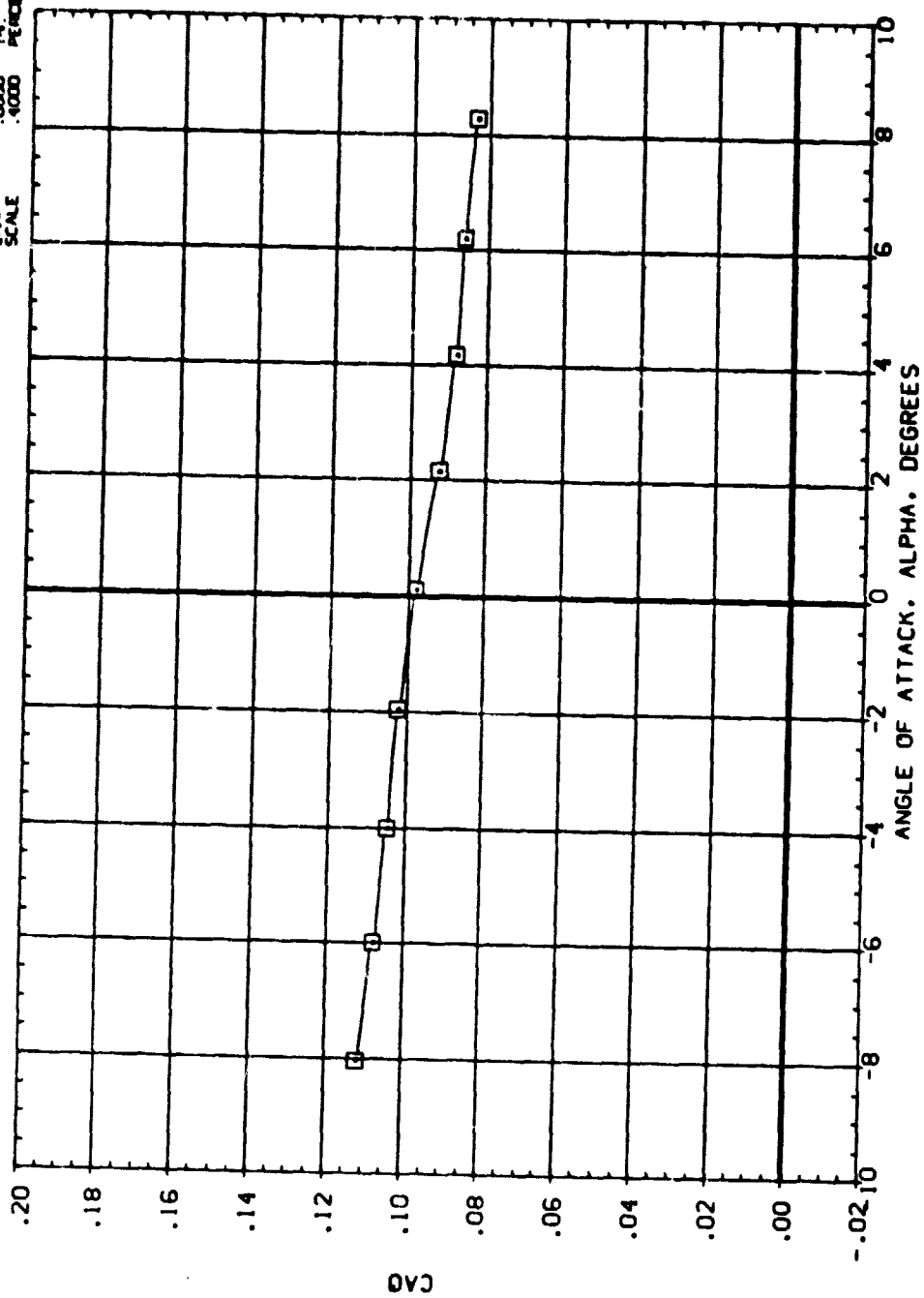


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2808) 8 DATA NOT AVAILABLE
 (FA2808) FA28. MSFC 1VT 656. CONFIG. 02VZ2PMPAATT353

REFERENCE INFORMATION
 DREF 6.1980 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 SREF .0000 IN.
 SCALE .4000 PERCENT

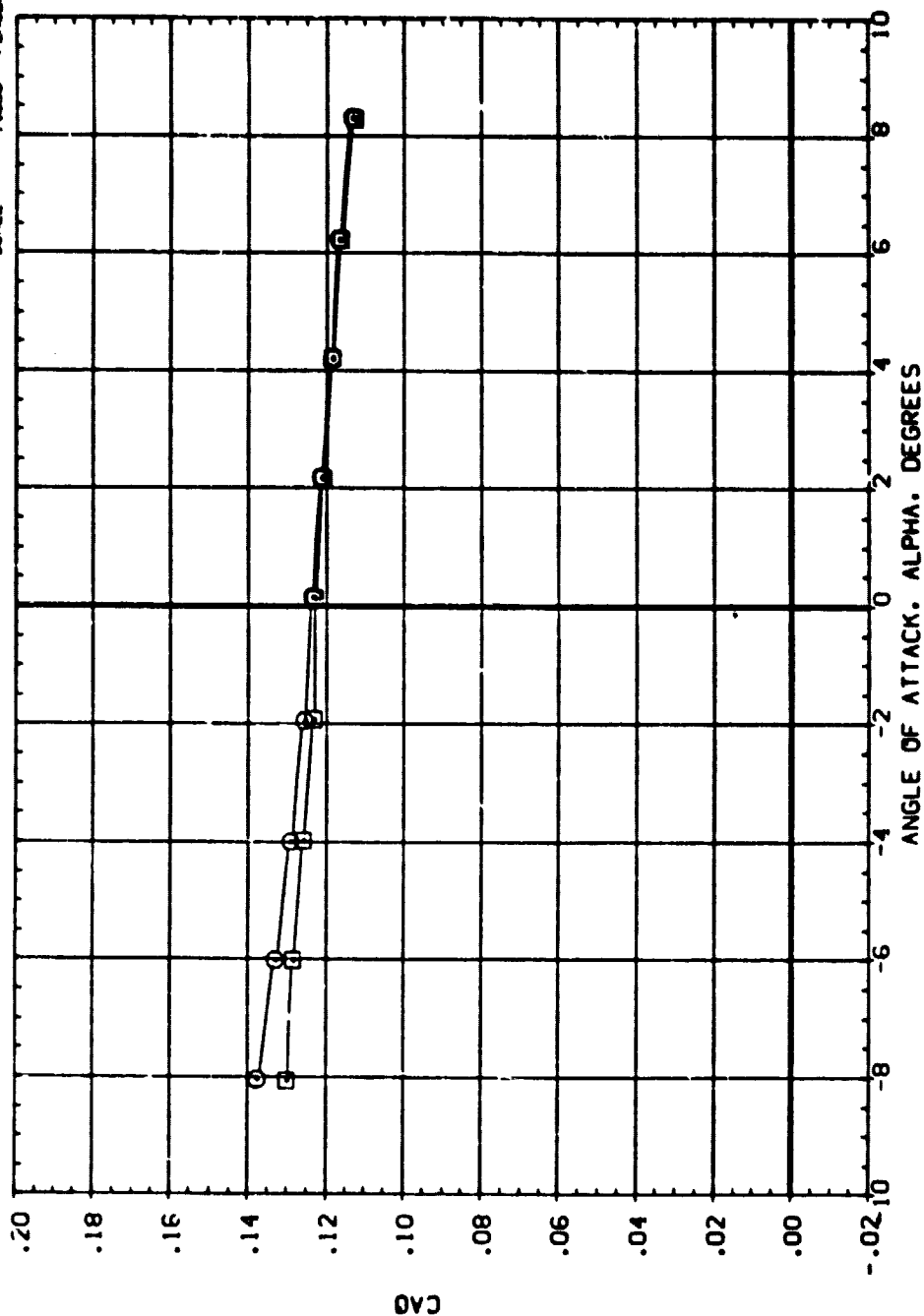


EFFECT OF ET PROTUBERANCES

(C)MACH = .95


DATA SET SYMBOL: \square CONFIGURATION DESCRIPTION:
 (FA2805) FA28. MSC INT 656. CONF IG. 02VLE20WAA1T753
 (FA2808) FA28. MSC INT 656. CONF IG. 02VLE20WAA1T753

REFERENCE INFORMATION
 SREF 6.1980 90. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT

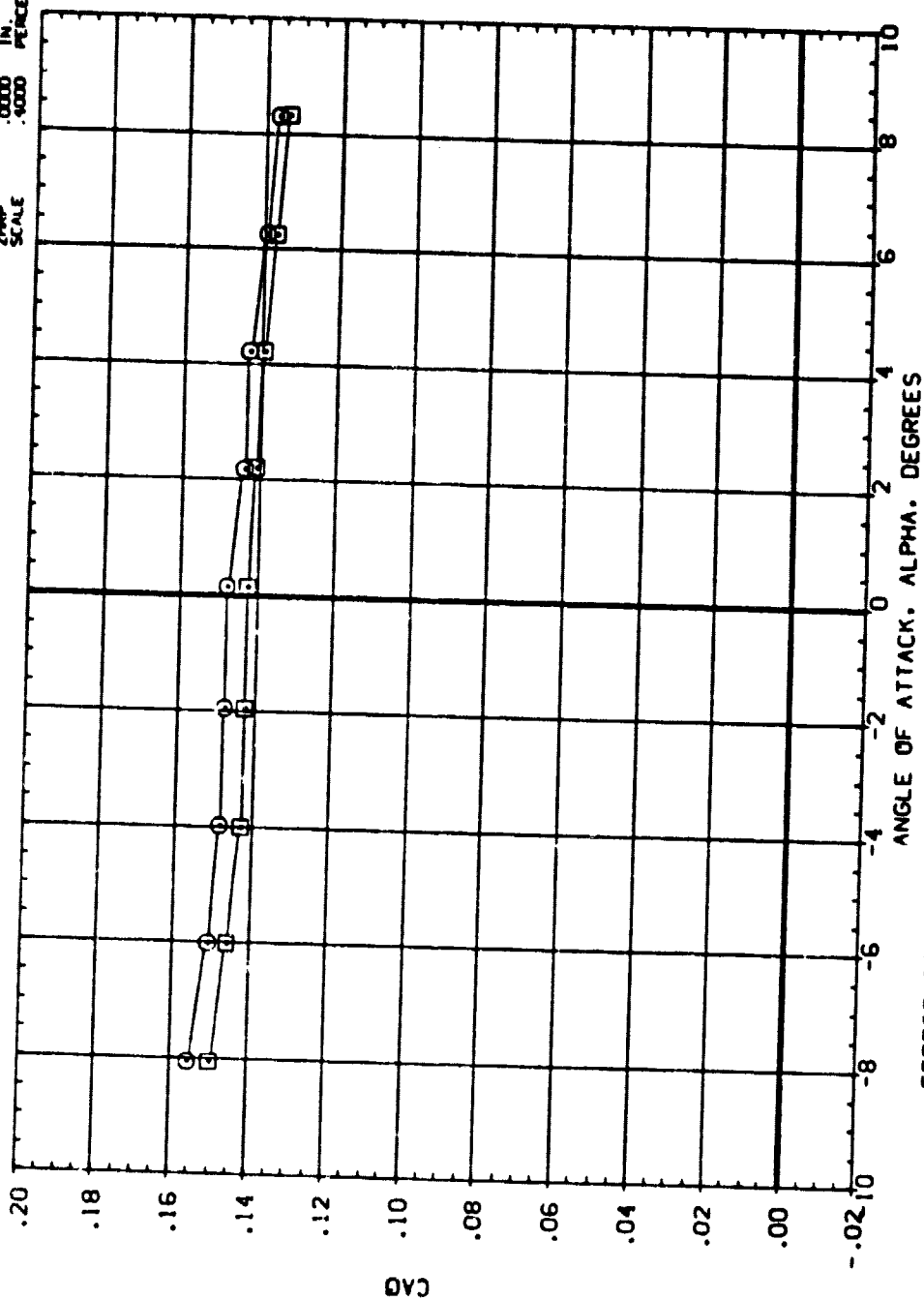


EFFECT OF ET PROTUBERANCES

(0)MACH = 1.05

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FA2805) FA28. MSFC TWT 656. CONF IG. 02V2E2M4PAATT753
 (FA2808) FA28. MSFC TWT 656. CONF IG. 02V2E2M4PAATT753

REFERENCE INFORMATION:
 SHEET 6.1580 50. IN.
 LINE 5.1612 IN.
 SPOT 3.7470 IN.
 WIND 2.7120 IN.
 ZWIND .0000 IN.
 SCALE .0000 PERCENT

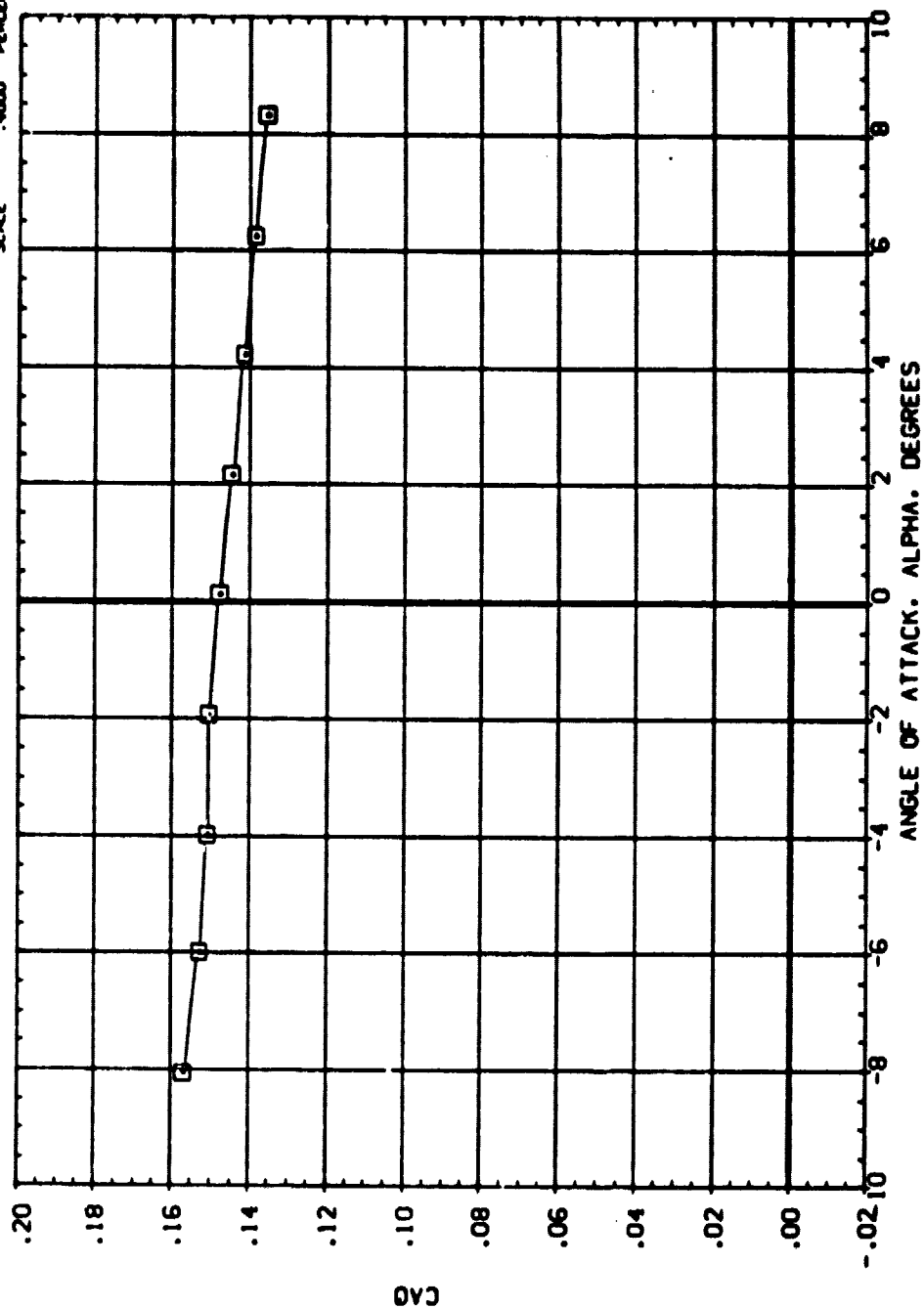


EFFECT OF ET PROTUBERANCES

(MACH = 1.11)

DATA SET SYMBOL: **Q** CONFIGURATION DESCRIPTION: DATA NOT AVAILABLE
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REFERENCE INFORMATION
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 LIFT 5.1612 IN.
 DRAG 3.7470 IN.
 YAW 2.7120 IN.
 ROLL .0000 IN.
 SCALE .0000 PERCENT



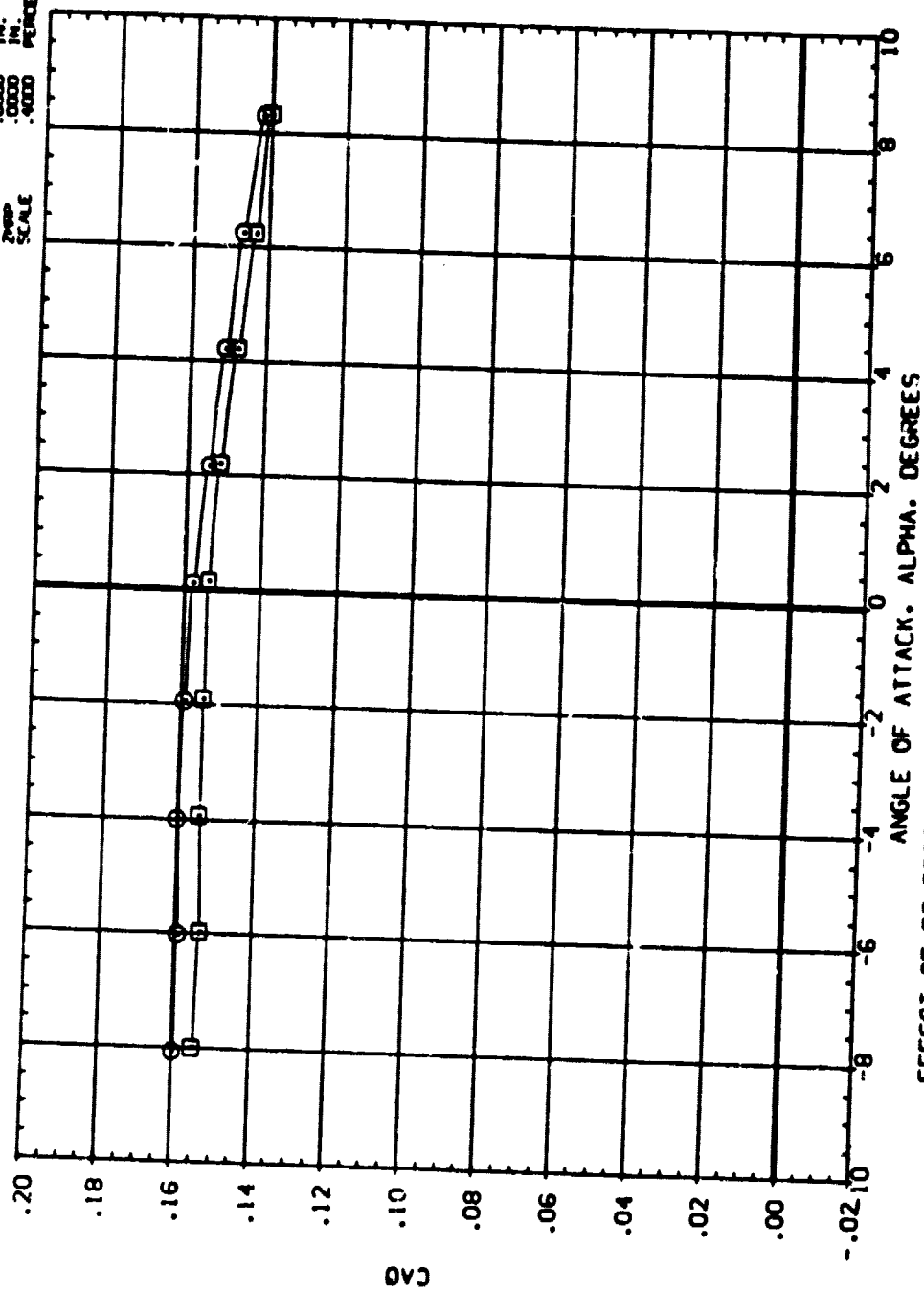
EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15

DATA SET SYMBOL CONFIGURATION DESCRIPTION: 00

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(F428083)	F428. MSFC TWT 636. CONFIG.

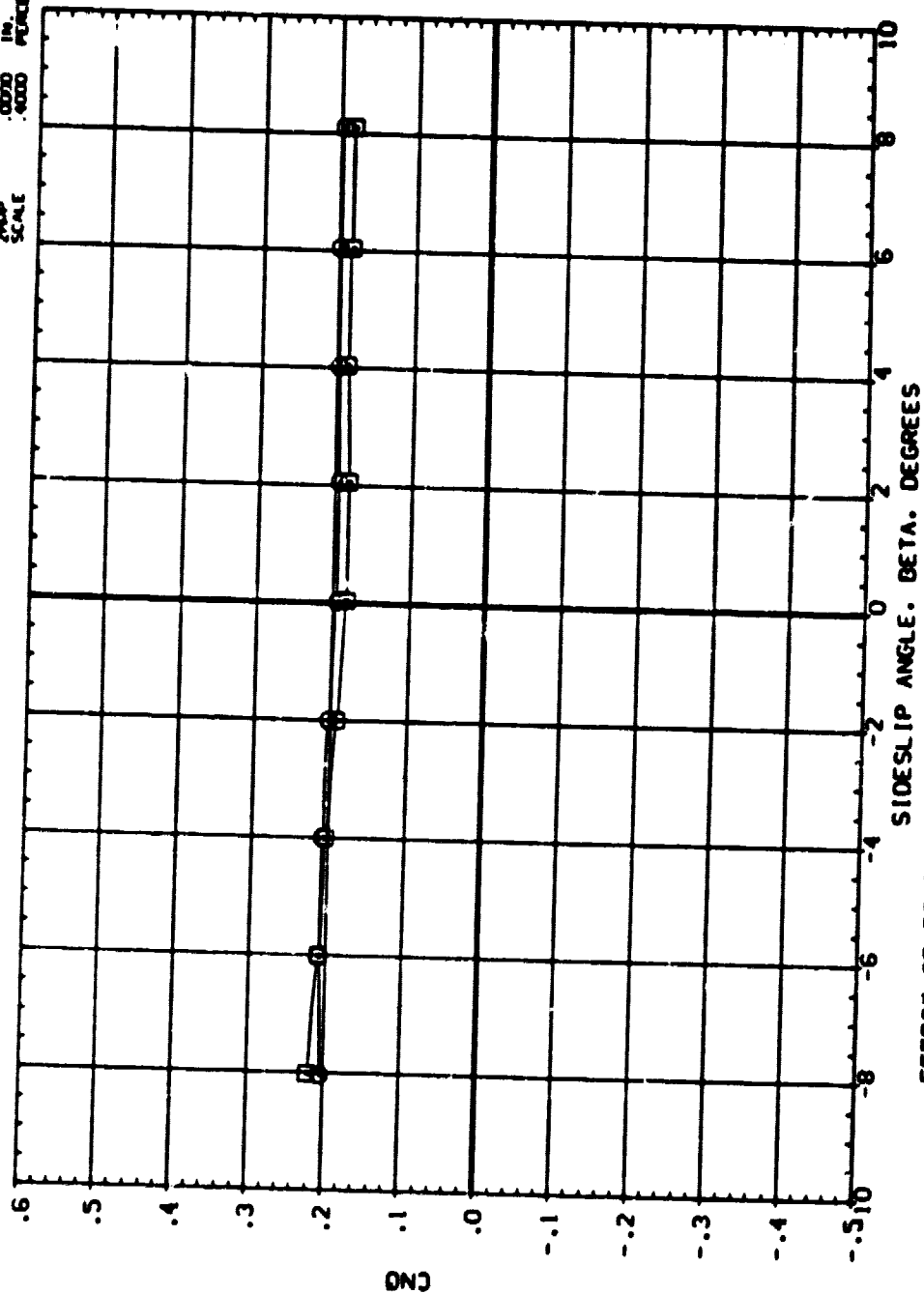
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LAST	2.7470	IN.	
SELF	2.7120	IN.	
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WTR	.0000	IN.	
WTR	.0000	IN.	
SCALE	.0000	PERIOD	



(G)MACH = 1.25

DATA SET SYMBOL: 8
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 FA28. MSC 141 656. CONF IG. 02VZ220AA11353

REFERENCE INFORMATION
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 BREF 3.7470 IN.
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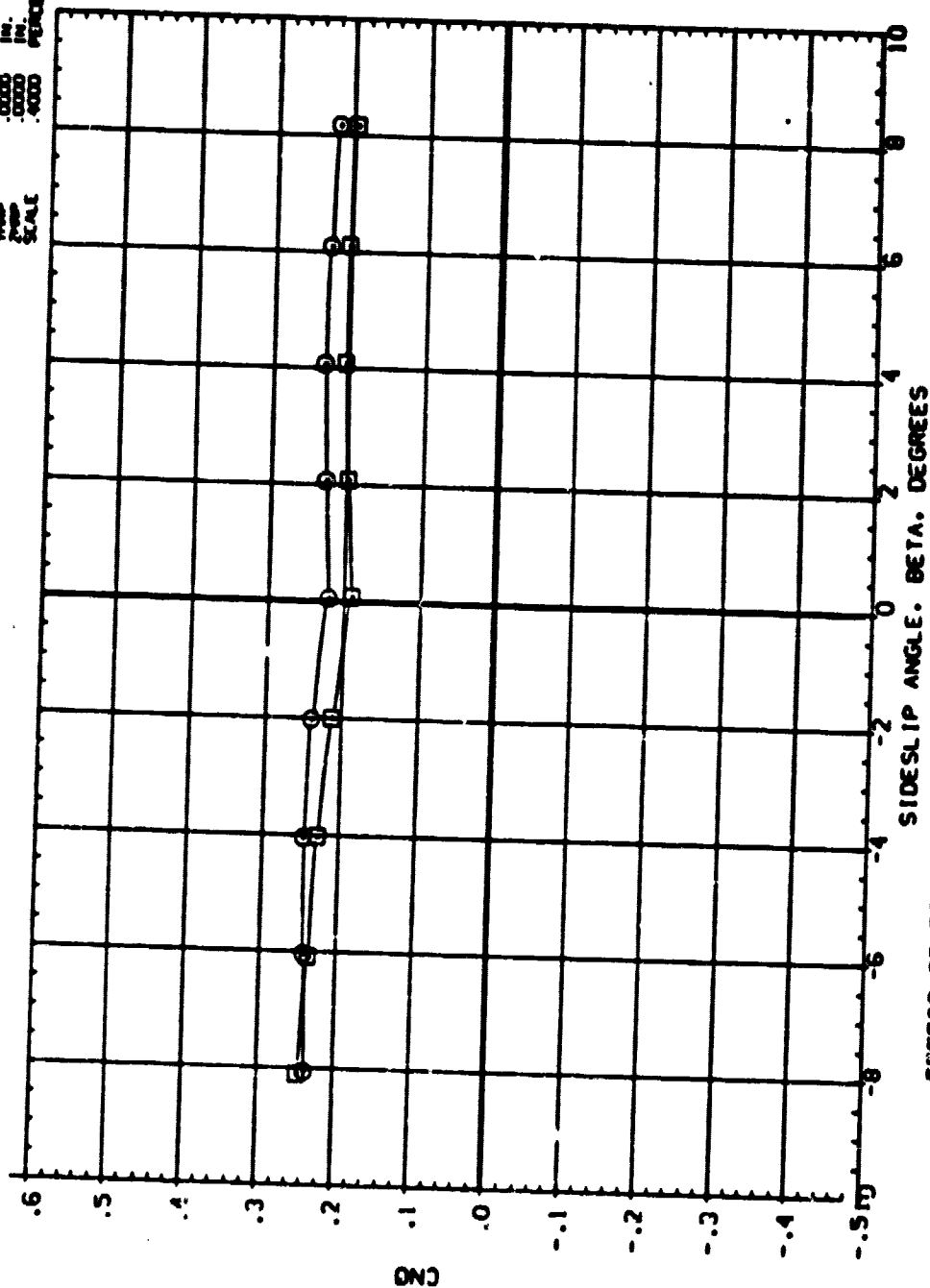


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: 8
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 TYPE: 8
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 PERIOD: 8

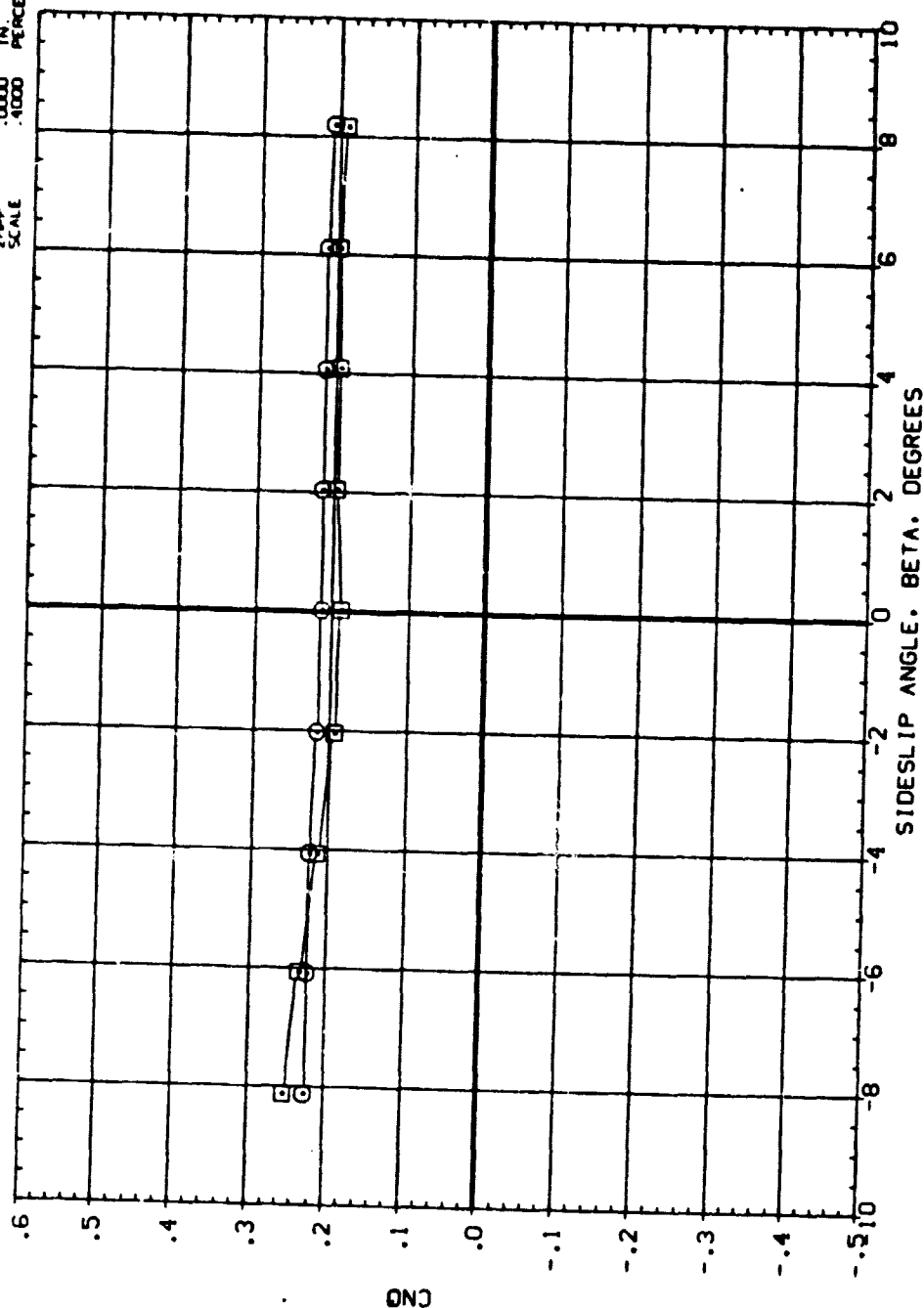


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION:
 (FA2805) FA28. MSFC INT 556. CONF 10. 02VZEPMAAT1253
 (FA2809) FA28. MSFC INT 556. CONF 10. 02VZEPMAAT1253

REFERENCE INFORMATION
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 BREF 2.7912 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

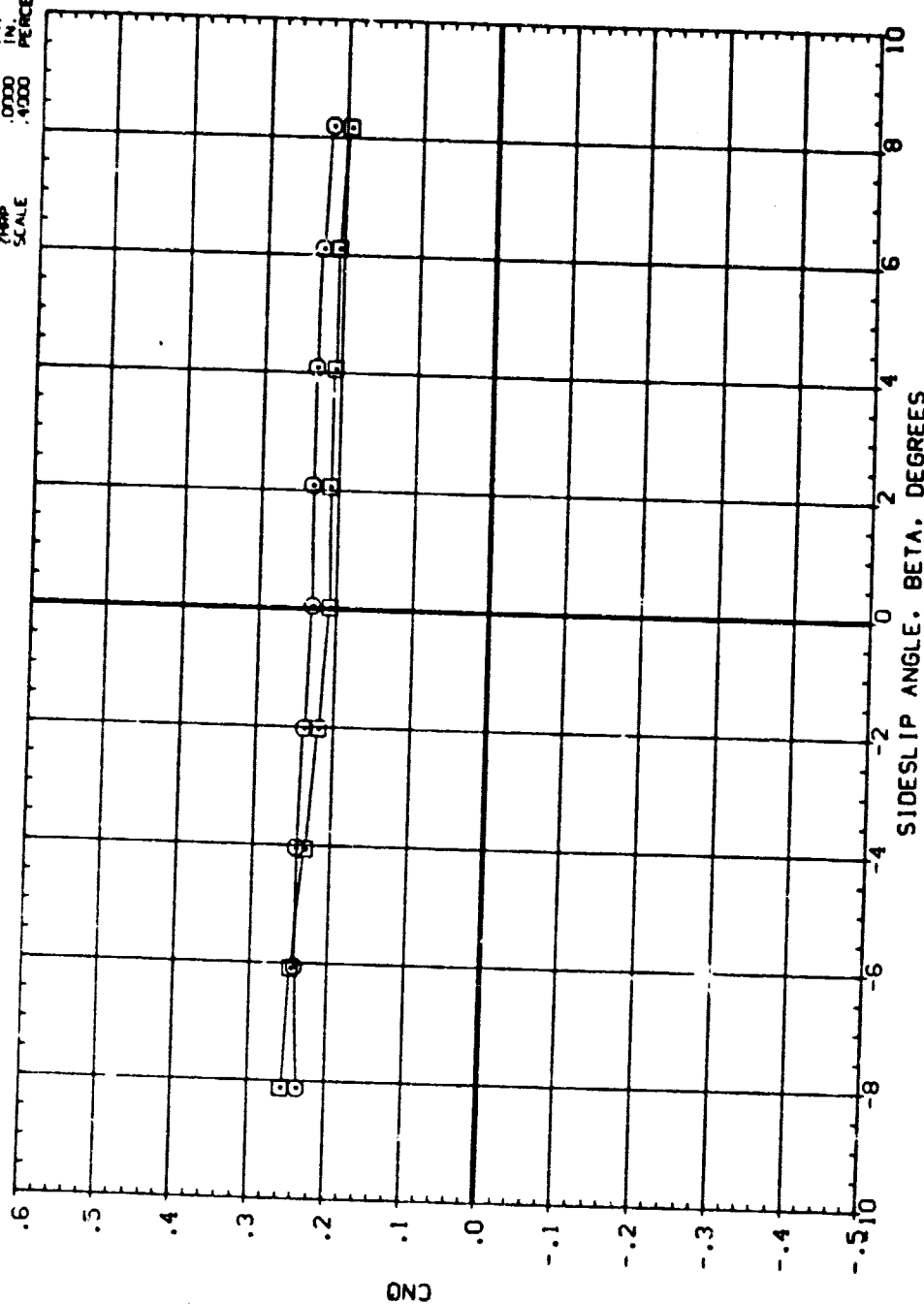


EFFECT OF ET PROTUBERANCES

(C.)MACH = 1.05

DATA SET SYMBOL: ☐ CONFIGURATION DESCRIPTION:
 (FA2806) FA28, MSC TWT 656, CONF IG. 02VZL20WAA1T353
 (FA2809) FA28, MSC TWT 656, CONF IG. 02VZL20WAA1T353

REFERENCE INFORMATION
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 LREF 5.1612 IN.
 BREF 3.7470 IN.
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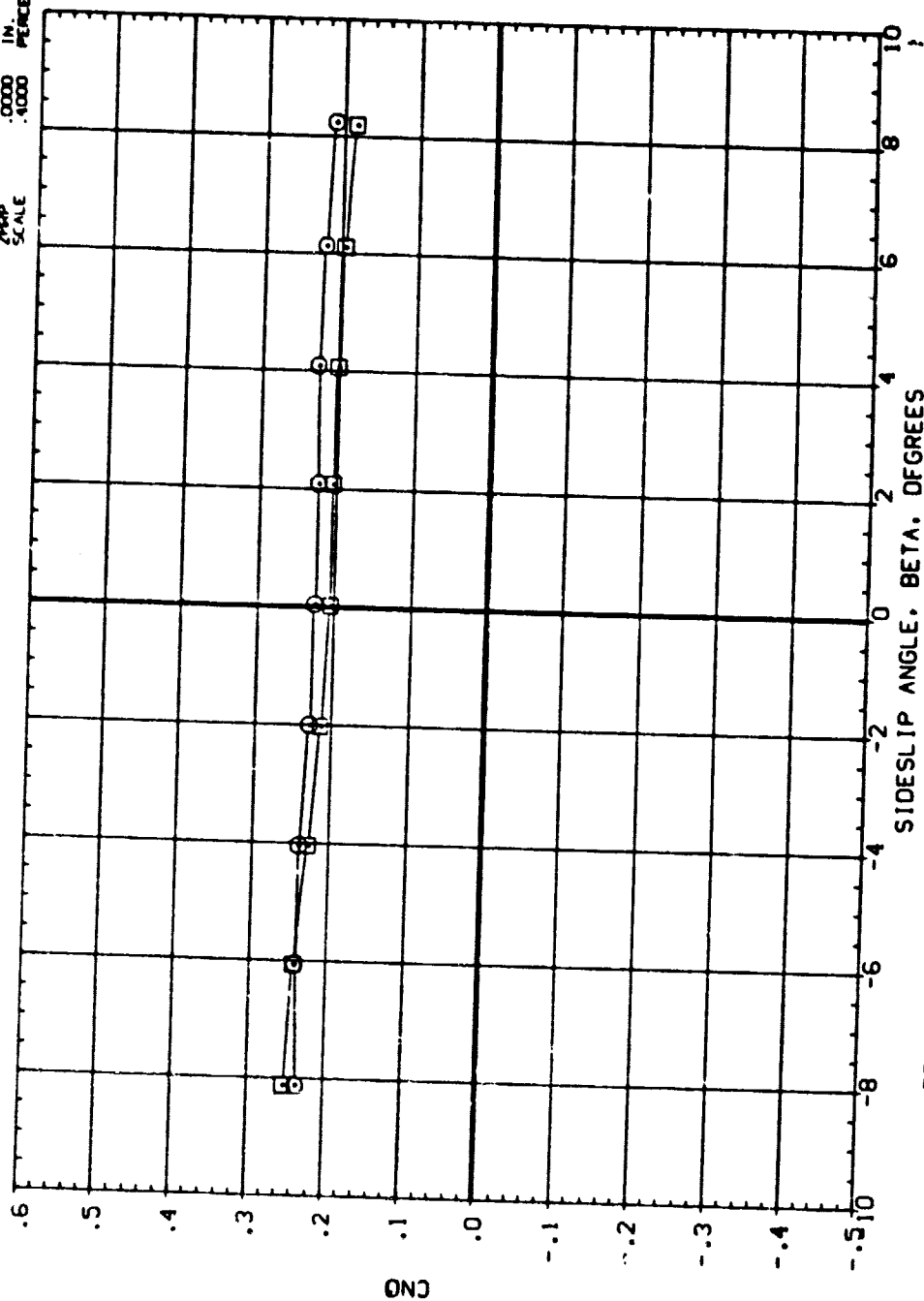


EFFECT OF ET PROTUBERANCES

(D)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2806) □ FA28. MSFC TWT 656. CONF 10. 02VZL2MMAATTJ53
 (FA2809) □ FA28. MSFC TWT 656. CONF 10. 02VZL2MMAATTJ53

REFERENCE INFORMATION
 SREF 6.1980 50. IN
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 BREF 3.7470 IN.
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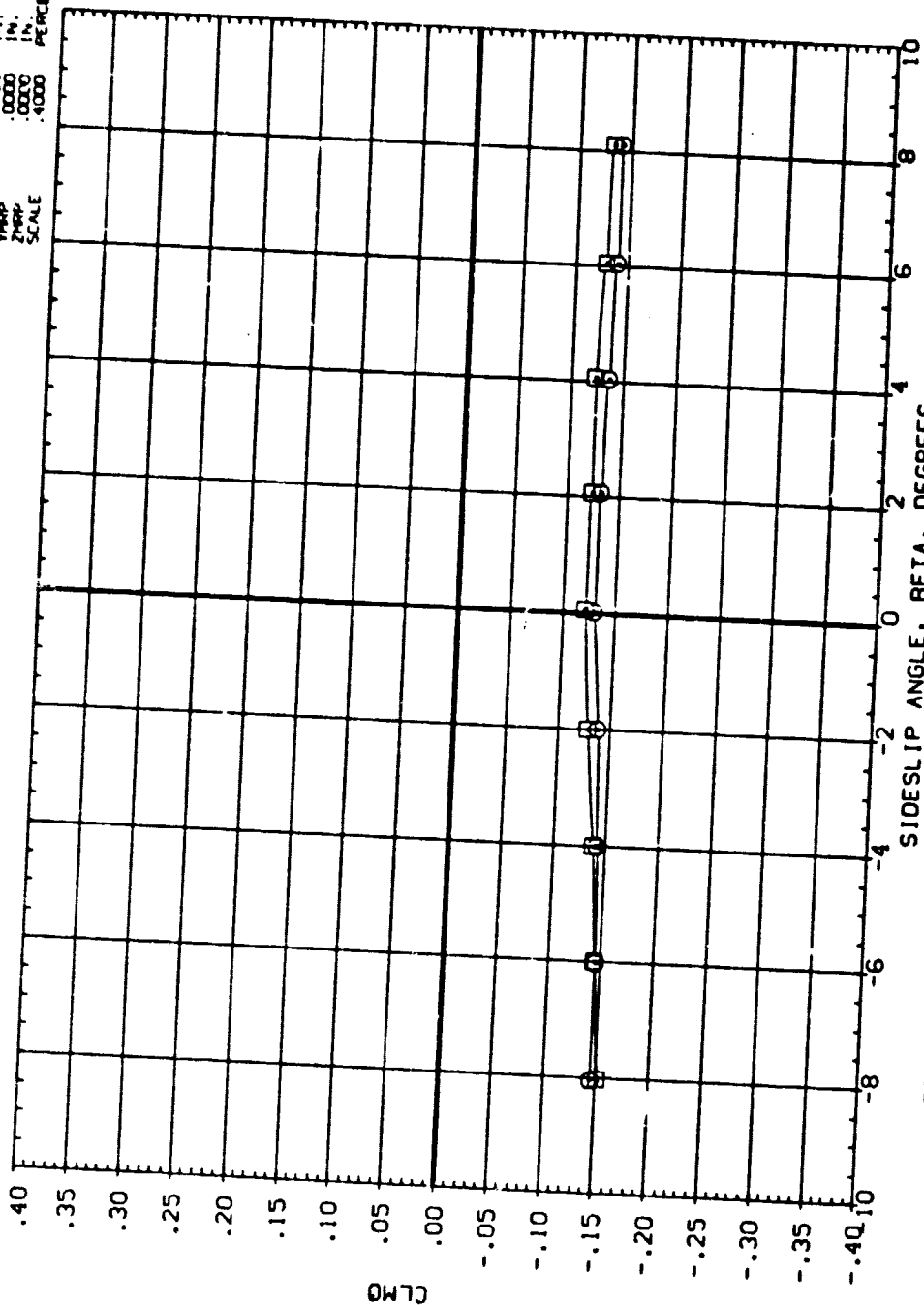


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.25

DATA SET SYMBOL: 8
 (FA2806) (FA2809)
 CONFIGURATION DESCRIPTION:
 FA28. MSFC TWT 656. CONF IG. 02VZ20VAAT1353
 FA28. MSFC TWT 656. CONF IG. 02VZ20PAAT1353

REFERENCE INFORMATION
 SREF 6.1580 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YPROP 2.7120 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

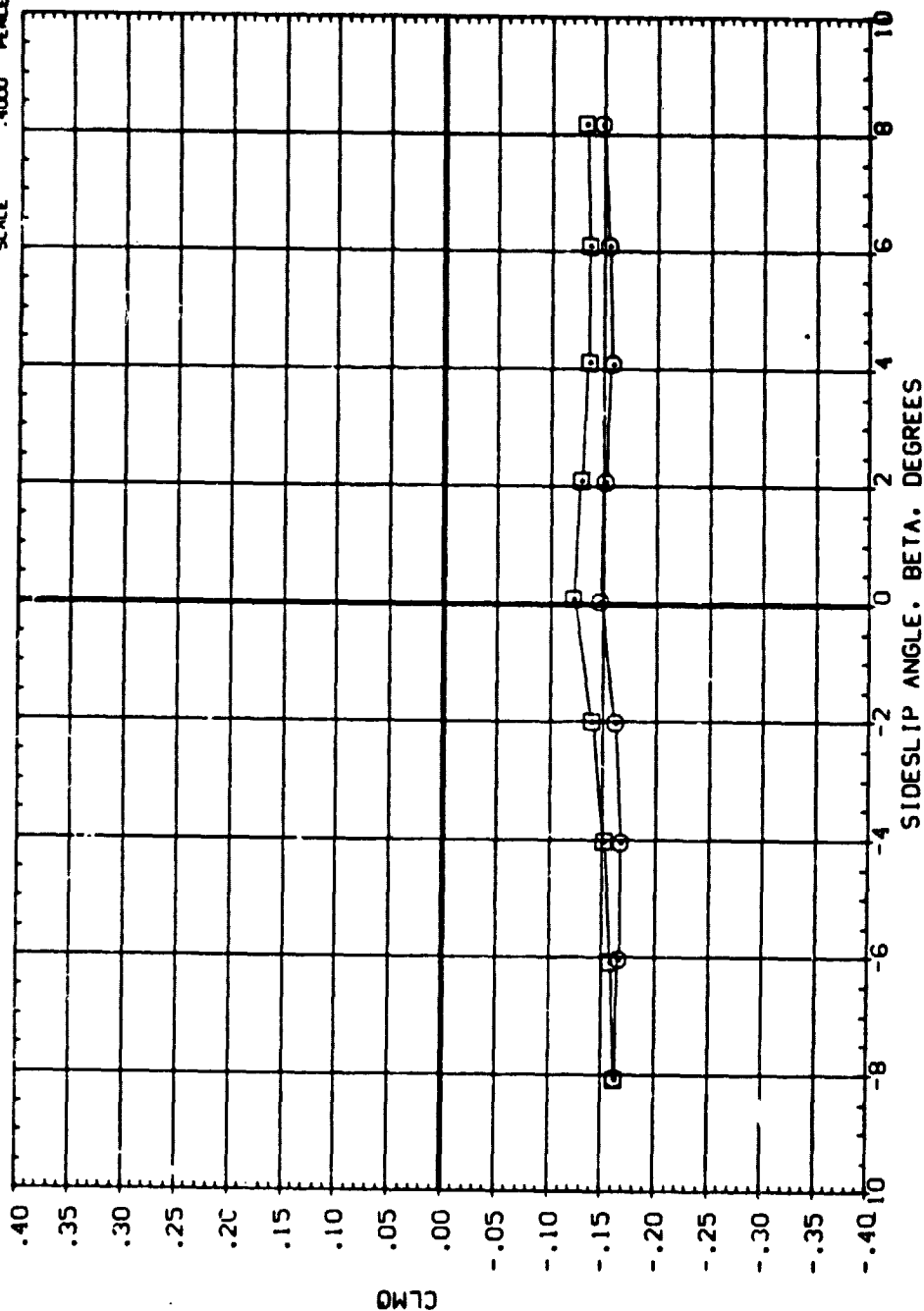


EFFECT OF LT PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: (FA2805) B
 CONFIGURATION DESCRIPTION: FA28, MSFC INT 656, CONF 10: 02VZ22PAA11253
 FA28, MSFC INT 656, CONF 10: 02VZ22PAA11353

REFERENCE INFORMATION
 SREF 6.1380 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
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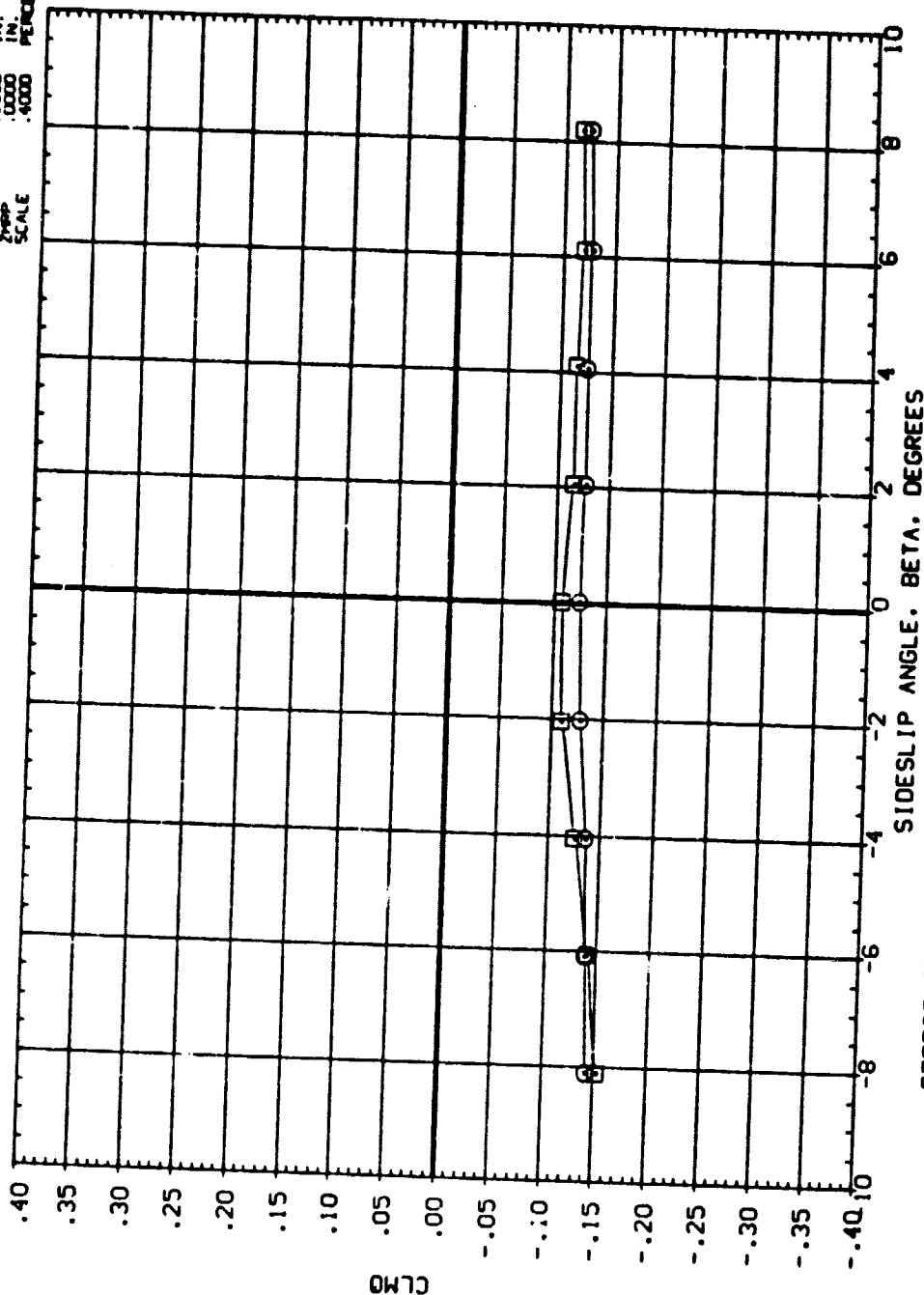


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL CI IGRATION DESCRIPTION
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 (FA2809) B FA28. MSC TWT 656. CONFIG. 02VZE20MAATT353

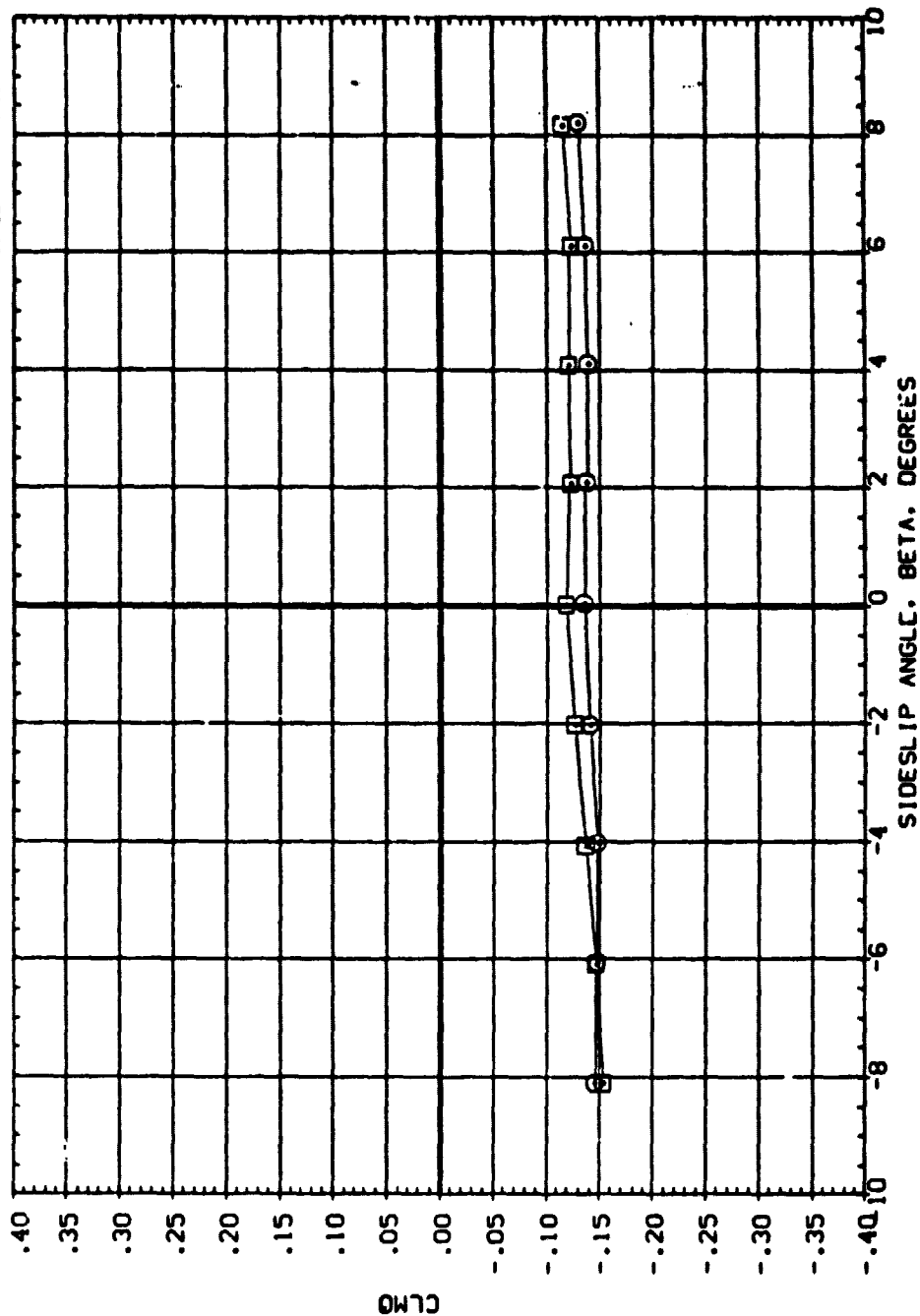
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 ZREF 0.0000 IN.
 SCALE .4000 PERCENT



EFFECT OF ET PROTUBERANCES
 (C)MACH = 1.05

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (FA2805) 8 FA28. MFC TWT 656: CONF. G. CONVEZANNAATT353
 (FA2805) 8 FA28. MFC TWT 656: CONF. G. CONVEZANNAATT353

REFERENCE INFORMATION
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 REF 3.7470 IN.
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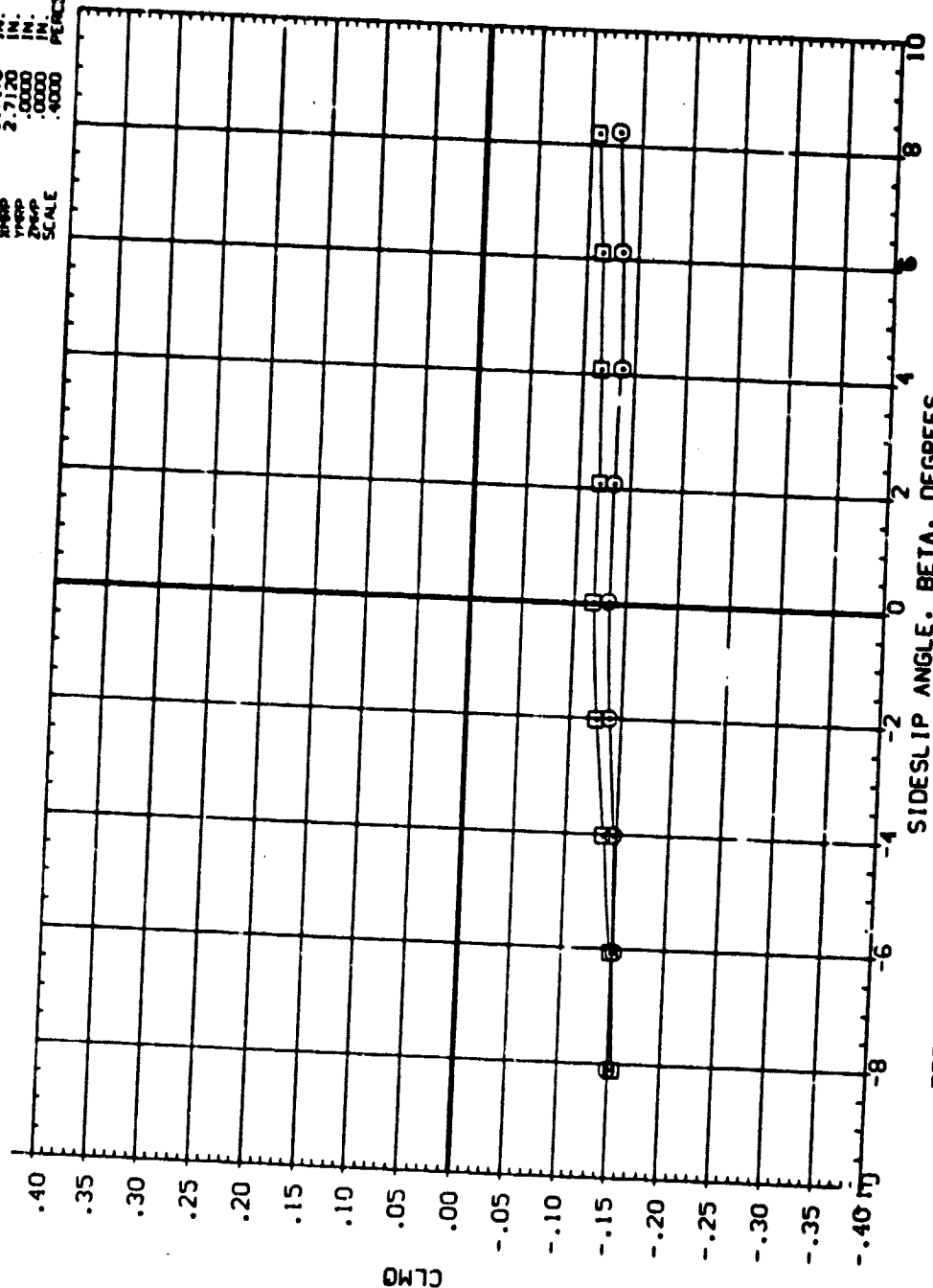


EFFECT OF ET PROTUBERANCES

(0)MACH = 1.10

DATA SET SYMBOL: 0
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 FA28. MSFC TWT 656. CONFIG. CONVEZMAATT353

REFERENCE INFORMATION
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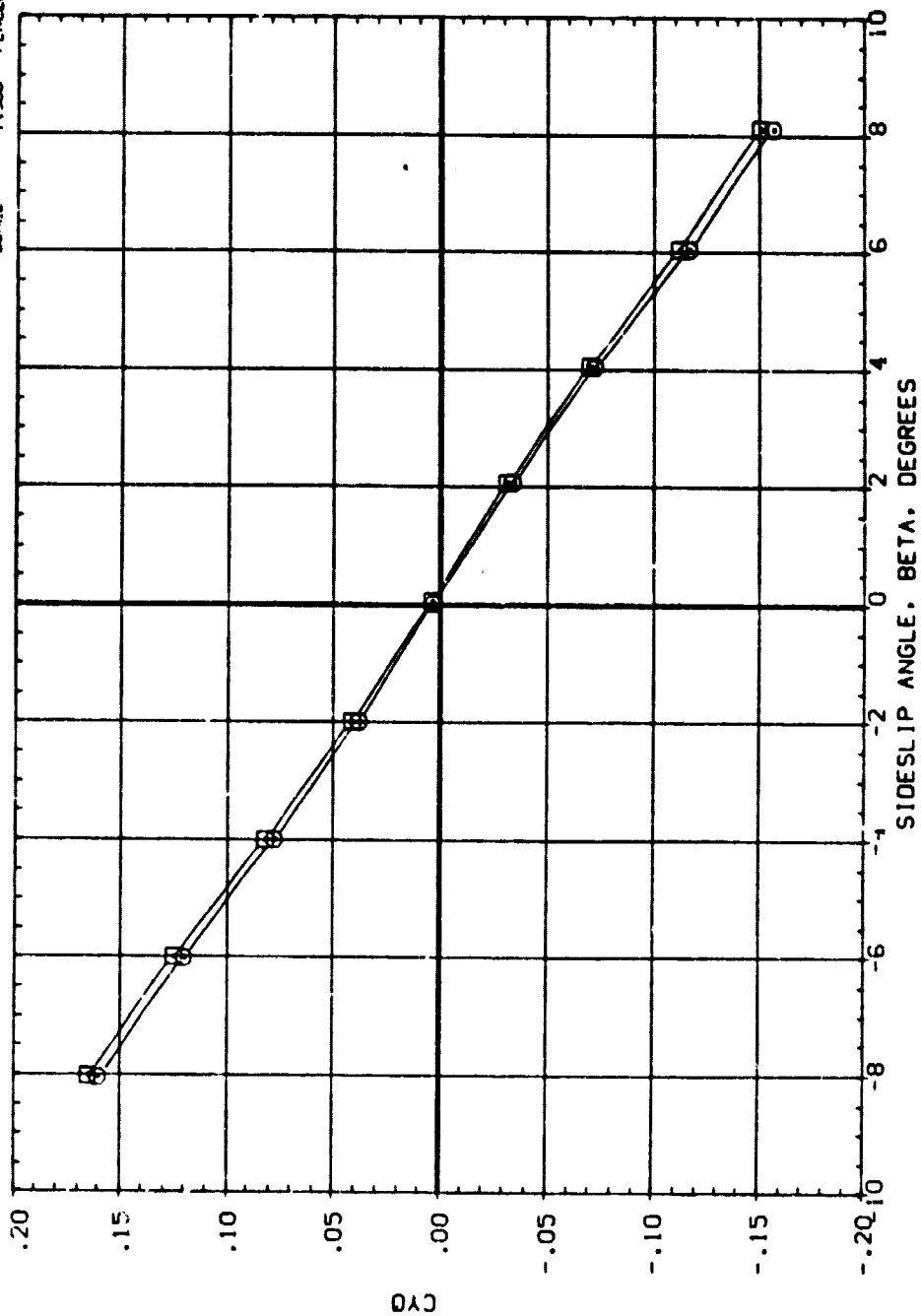


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2805) □ FA28. MSC TWT 656. CONF 16. 02NZE ZNPAATT353
 (FA2805) □ FA28. MSC TWT 656. CONF 16. 02NZE ZNPAATT353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN
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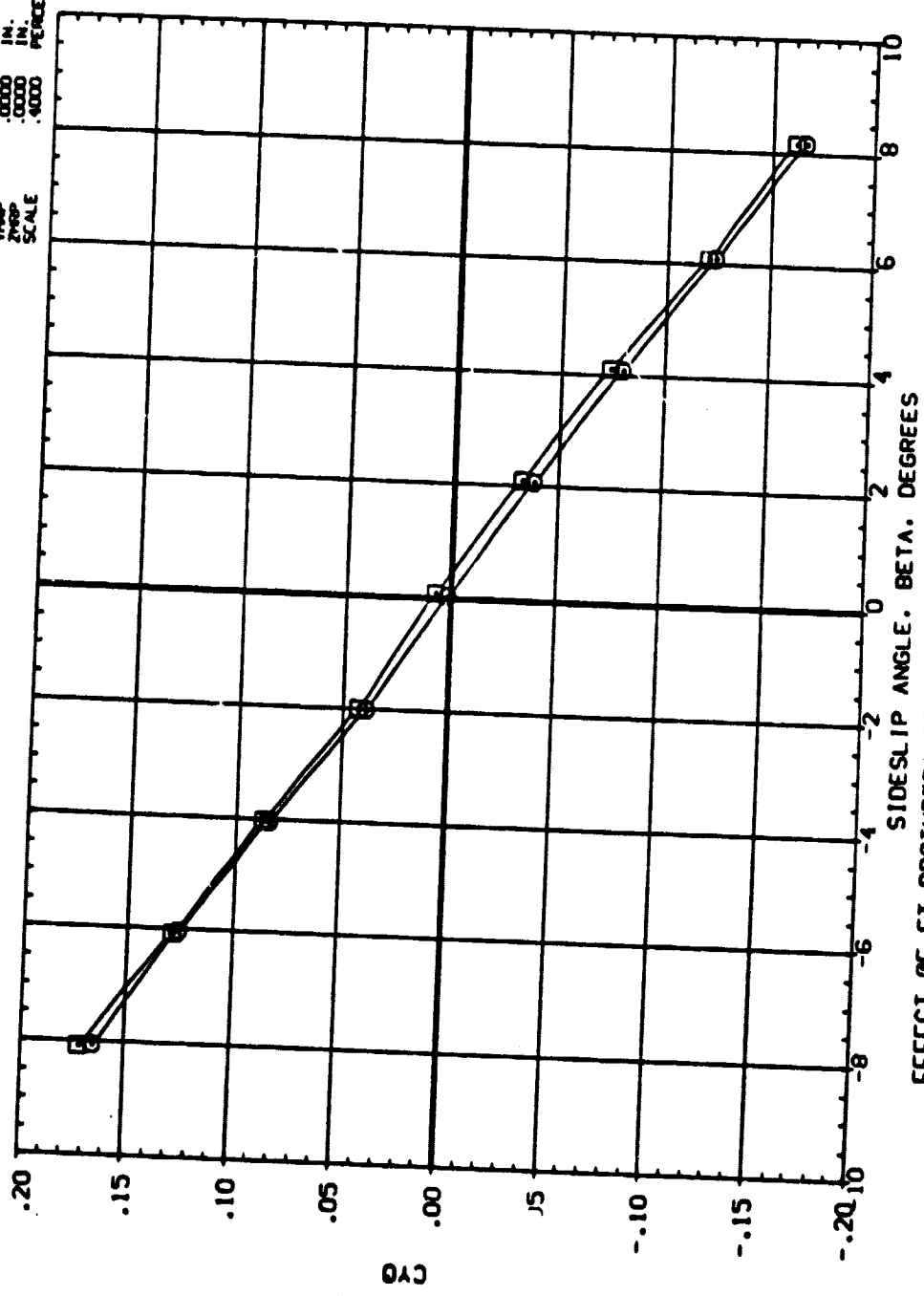


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SWELL. CONFIGURATION DESCRIPTION
 (FAZ005) B FAZ0. MPTC INT 655. CONF IG. CONVEZDMMAT133
 (FAZ005) B FAZ0. MPTC INT 655. CONF IG. CONVEZDMMAT133

REFERENCE INFORMATION
 SWELL 6.1580 SQ. IN.
 MPTC 5.1612 IN.
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 SCALE .0000 PERCENT

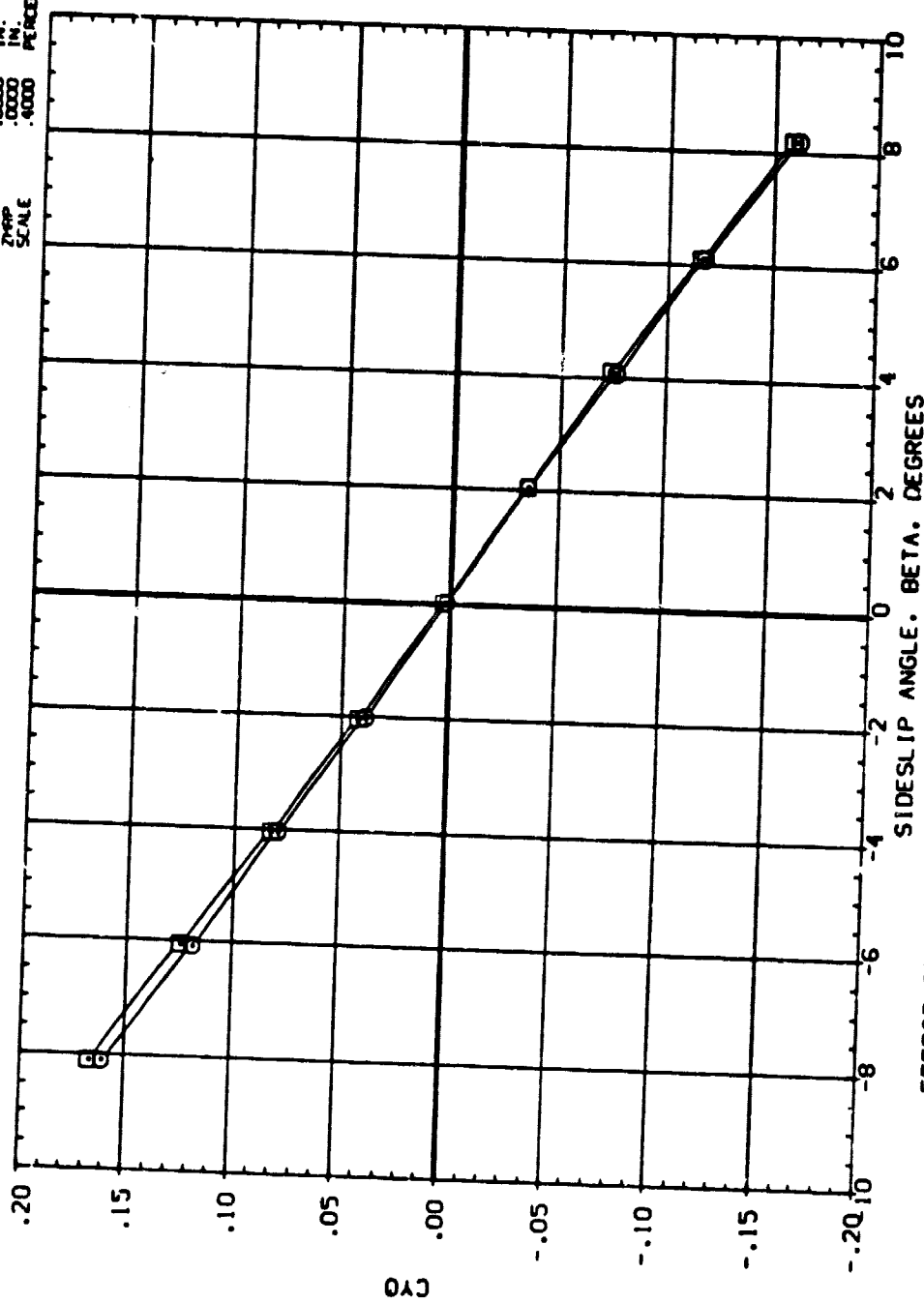


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
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 (FA2809) B FA28. MSFC TVT 656. CONFIG. QWZ22MAATT353

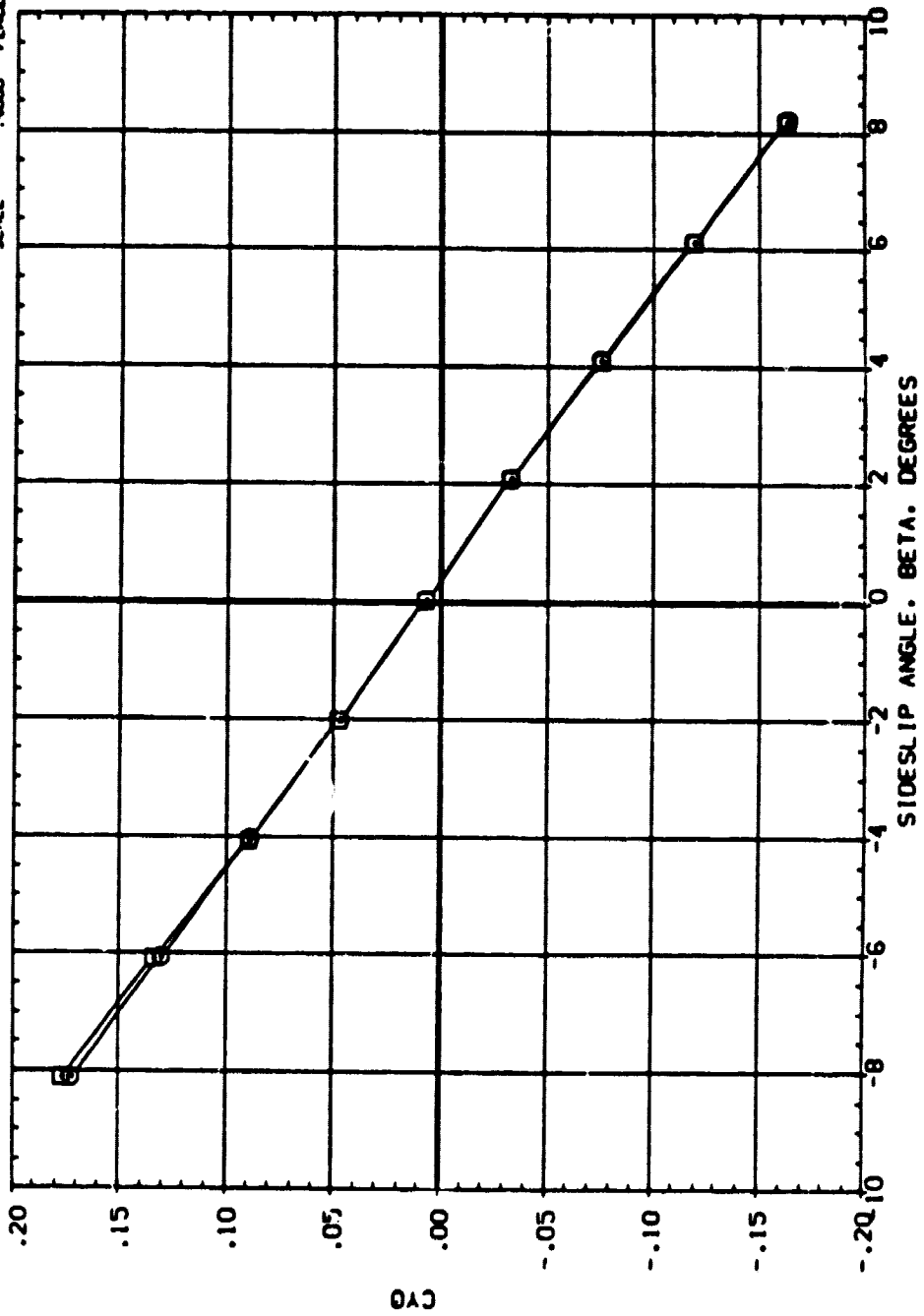
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 BREF 2.1470 IN.
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 SCALE .0000 IN.
 PERCENT .4000 PERCENT



EFFECT OF ET PROTUBERANCES
 (C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2805) □ FA28. MSEC TUT GSC. CONF IG. CONZEPMAATT353
 (FA2805) □ FA28. MSEC TUT GSC. CONF IG. CONZEPMAATT353

REFERENCE INFORMATION
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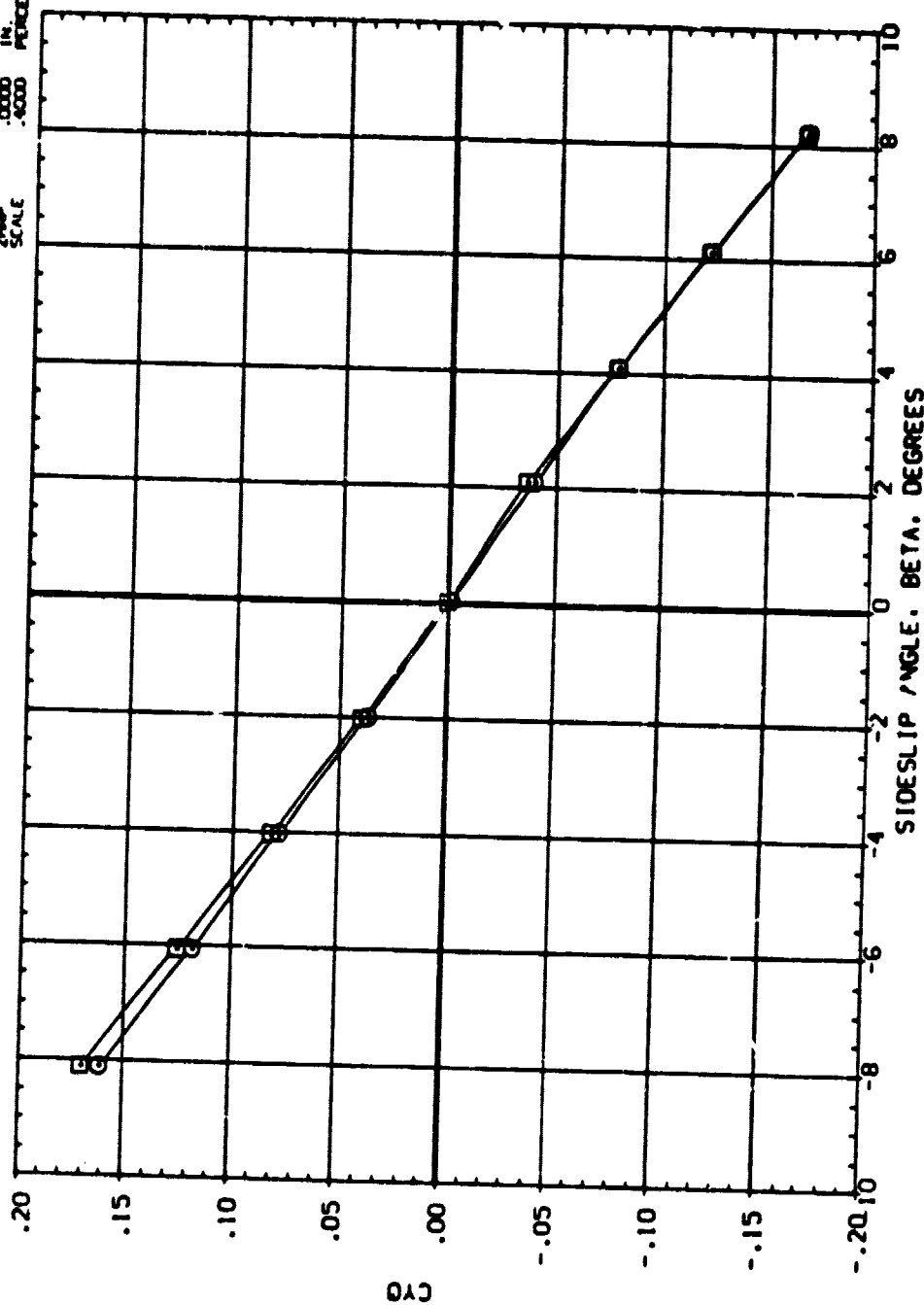


EFFECT OF ET PROTUBERANCES

(O)MACH = 1.10

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
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 (FA2805) B FA28: MSPC TWT 655: CONF 1G: CONVZ22MAATT353

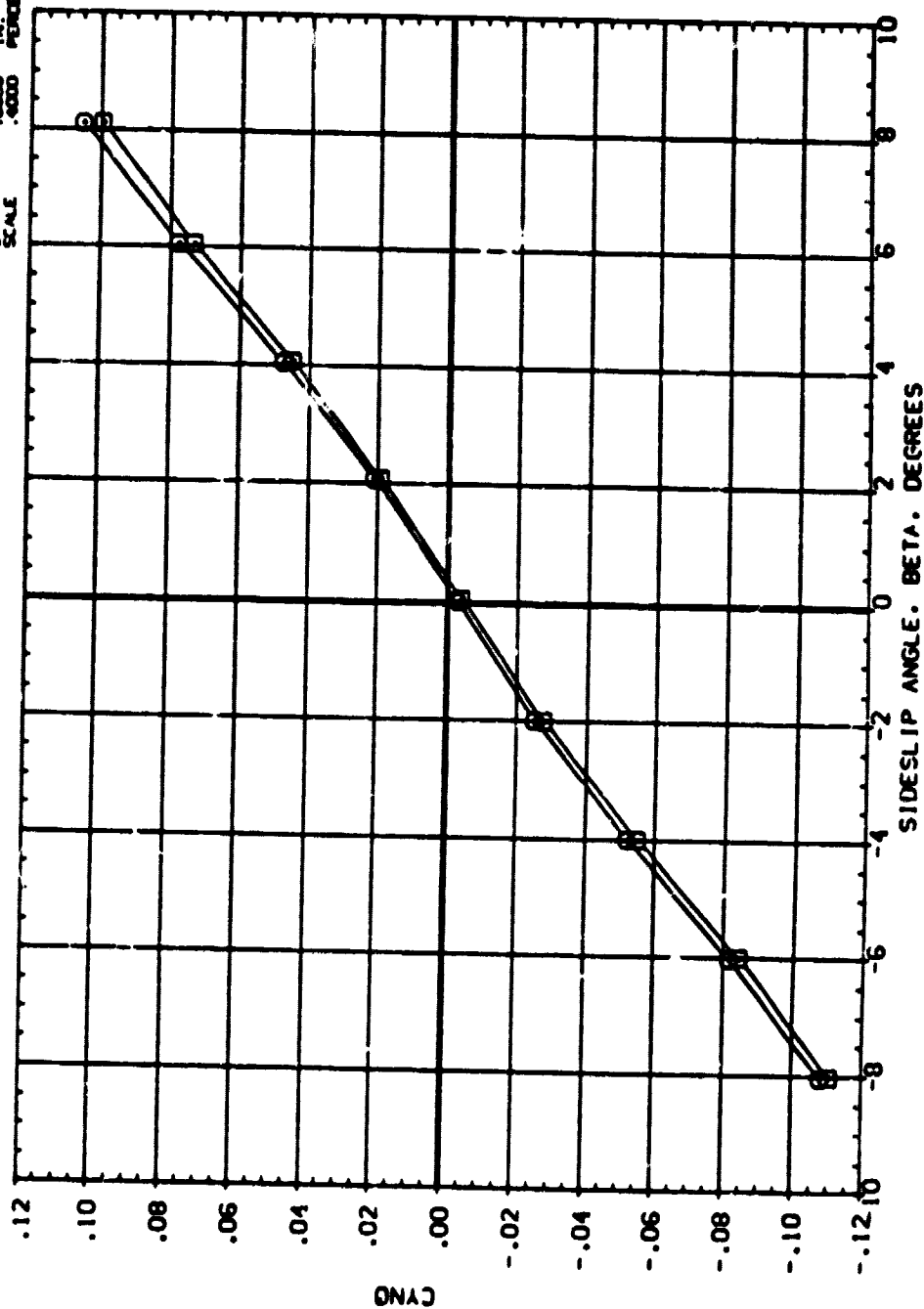
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 WREF 2.7120 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF ET PROTRUDANCES

(E)MACH = 1.25

AUDIENCE INFORMATION	
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SECT	2.7470 IN.
REAS	2.7120 IN.
WAGE	.0000 IN.
YOUNG	.0000 IN.
SCALE	.0000 PERCENT

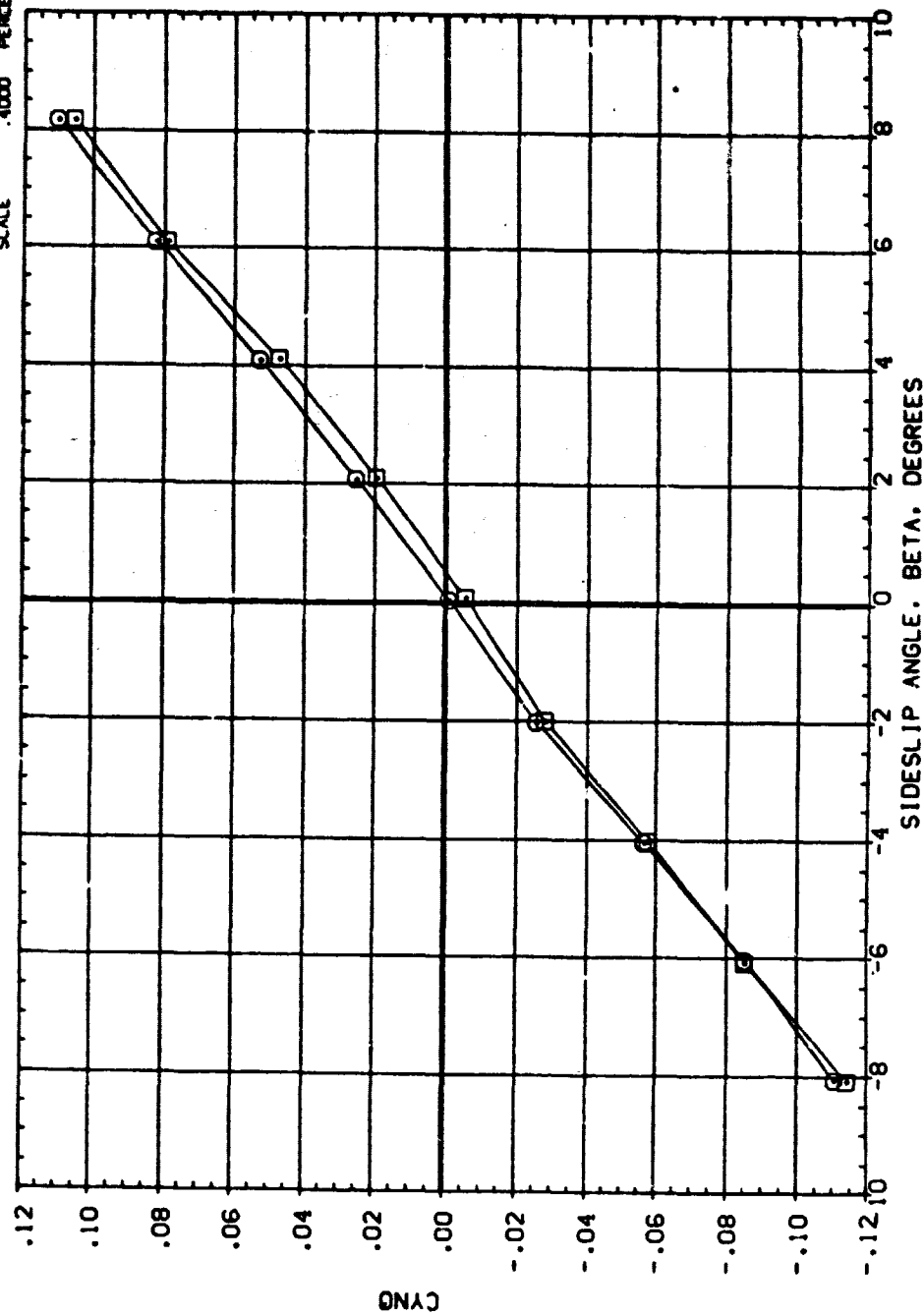


EFFECT OF ET PROTUBERANCES

(V)MACH = .60

DATA SET SYMBOL: B
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 (FA2805) FA28. MSFC TWT 656. CONF 10. 02VZ2RPAAT1353
 (FA2809)

REFERENCE INFORMATION:
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
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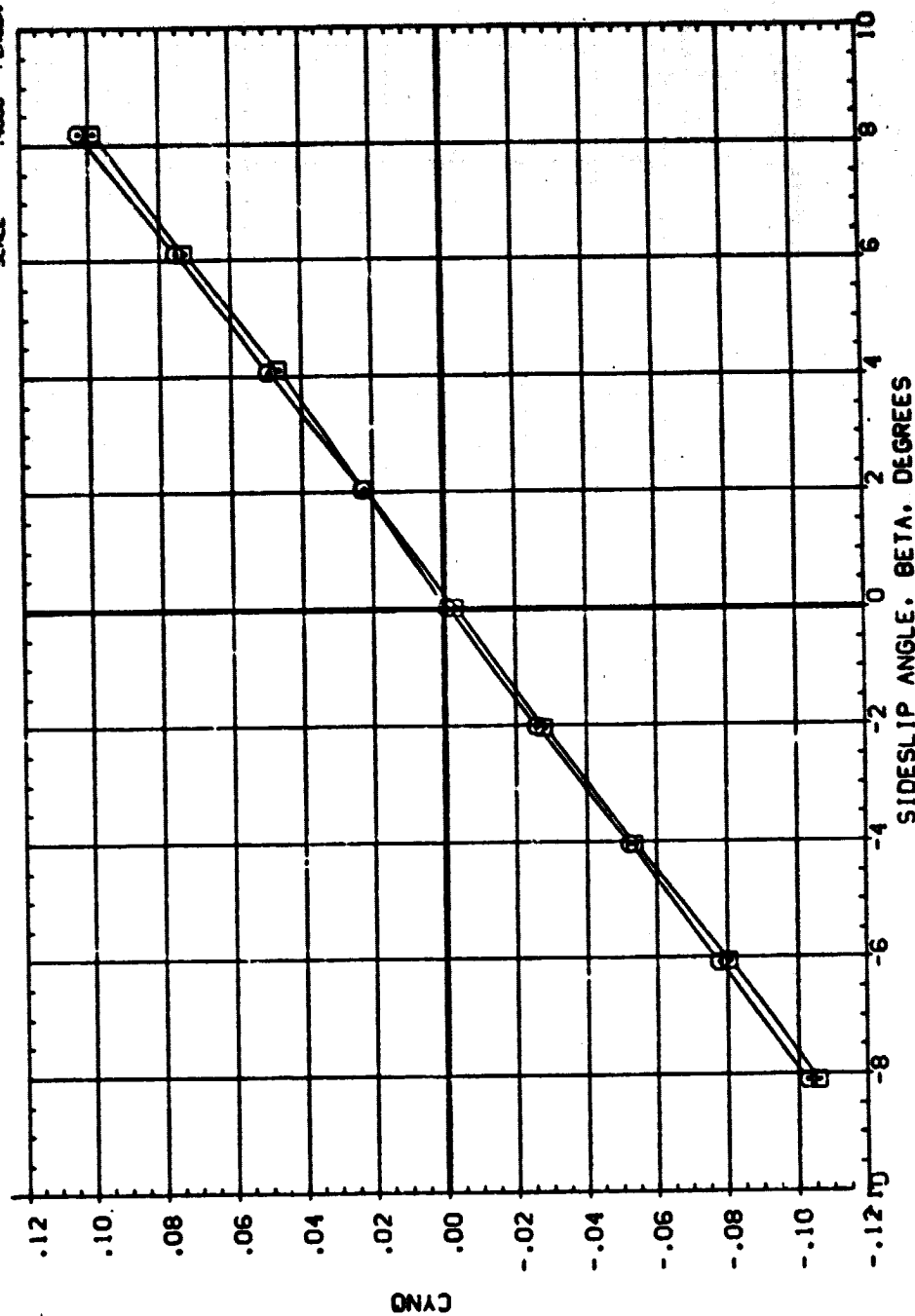


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL: 8
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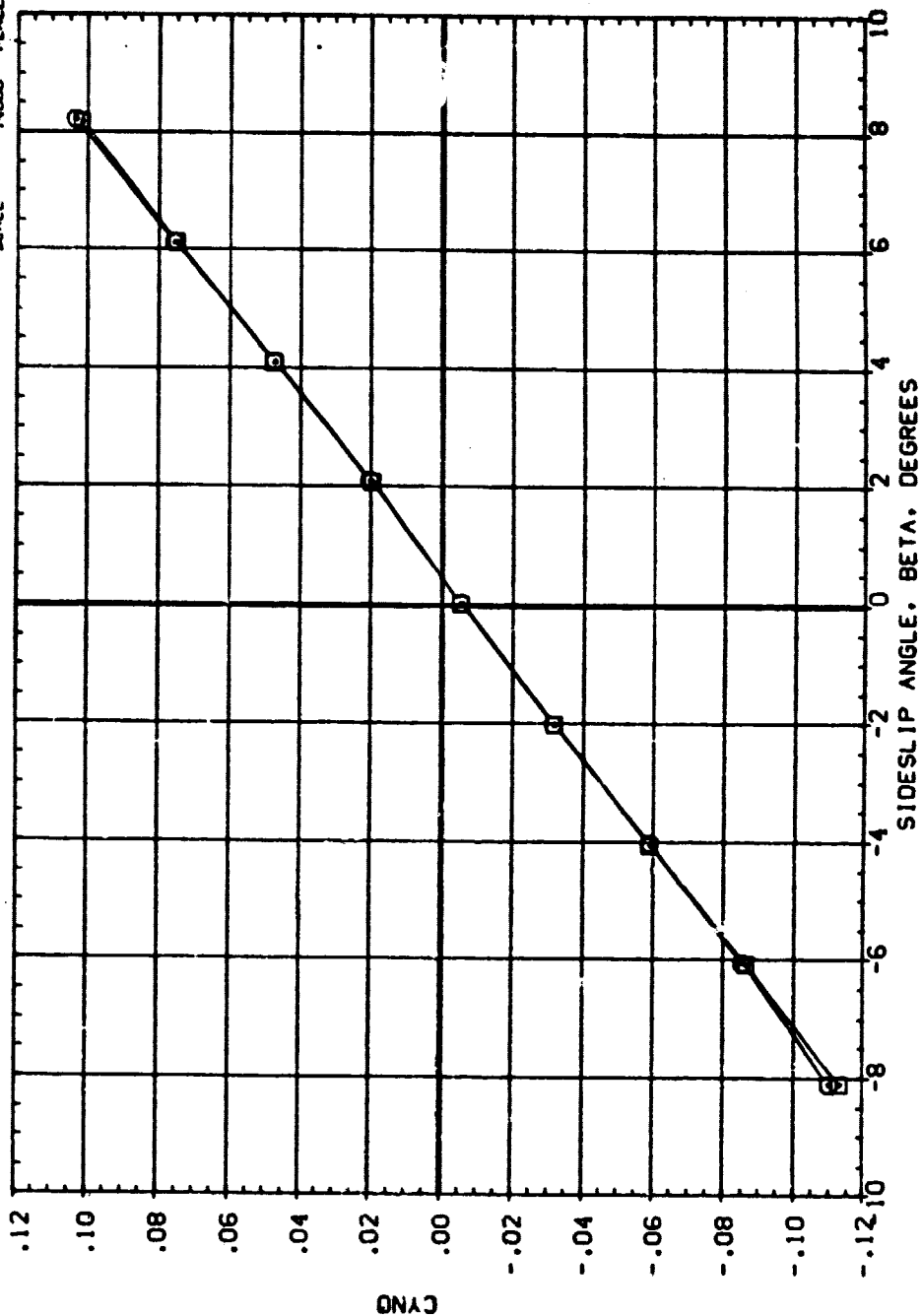
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 ZREF: .0000 IN.
 SCALE: .0000 PERIOD



EFFECT OF ET PROTUBERANCES
 (C)MACH = 1.05

DATA SET SYMBOL: (FA2809) ☐ CONFIGURATION DESCRIPTION: FA28. MSFC TUT 856. CONF 1G. 02VZ22MAATT253
 FA28. MSFC TUT 856. CONF 1G. 02VZ22MAATT253

REFERENCE INFORMATION
 SREF 6.1580 IN.
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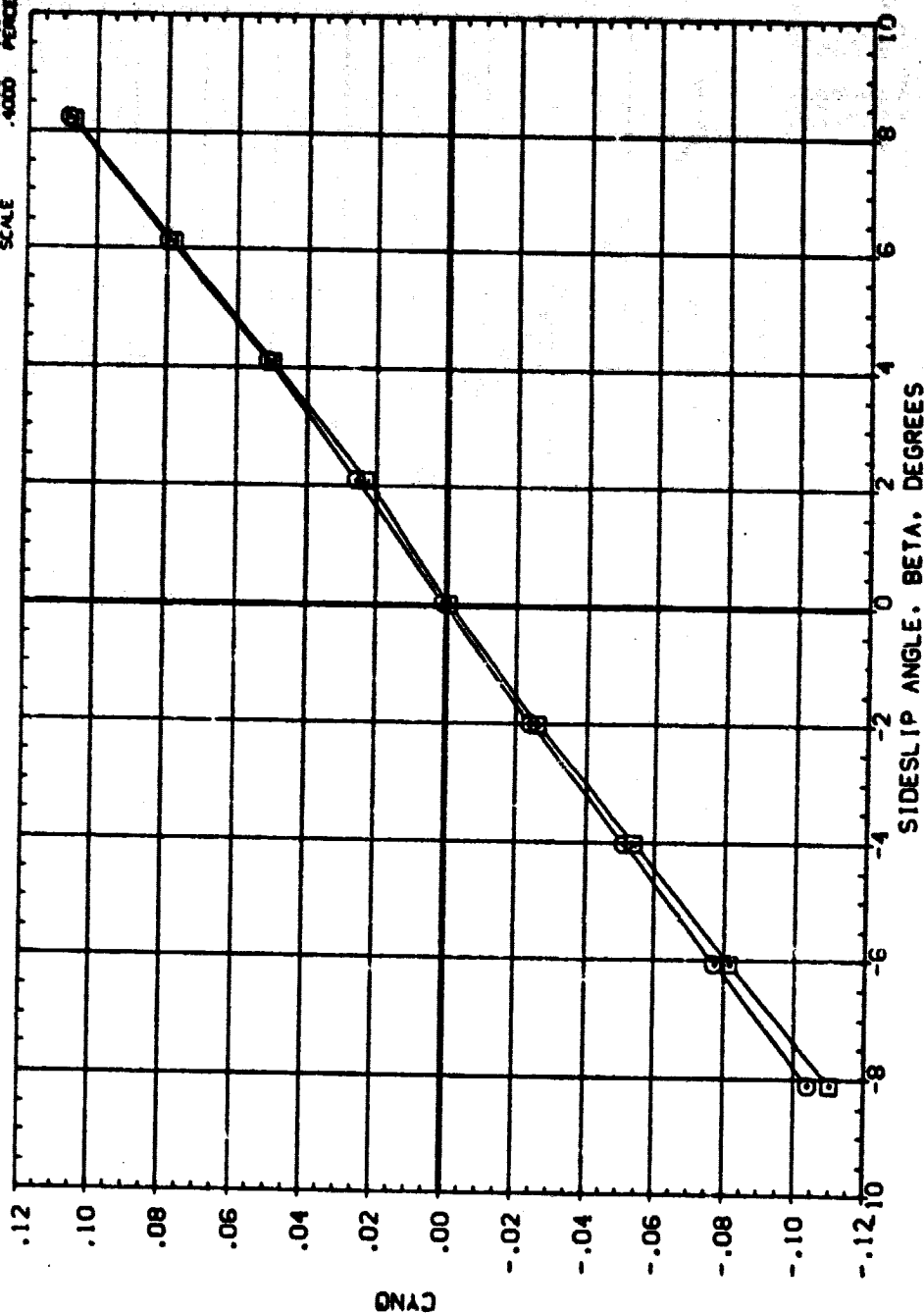


EFFECT OF ET PROTUBERANCES

(O)MACH = 1.10

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
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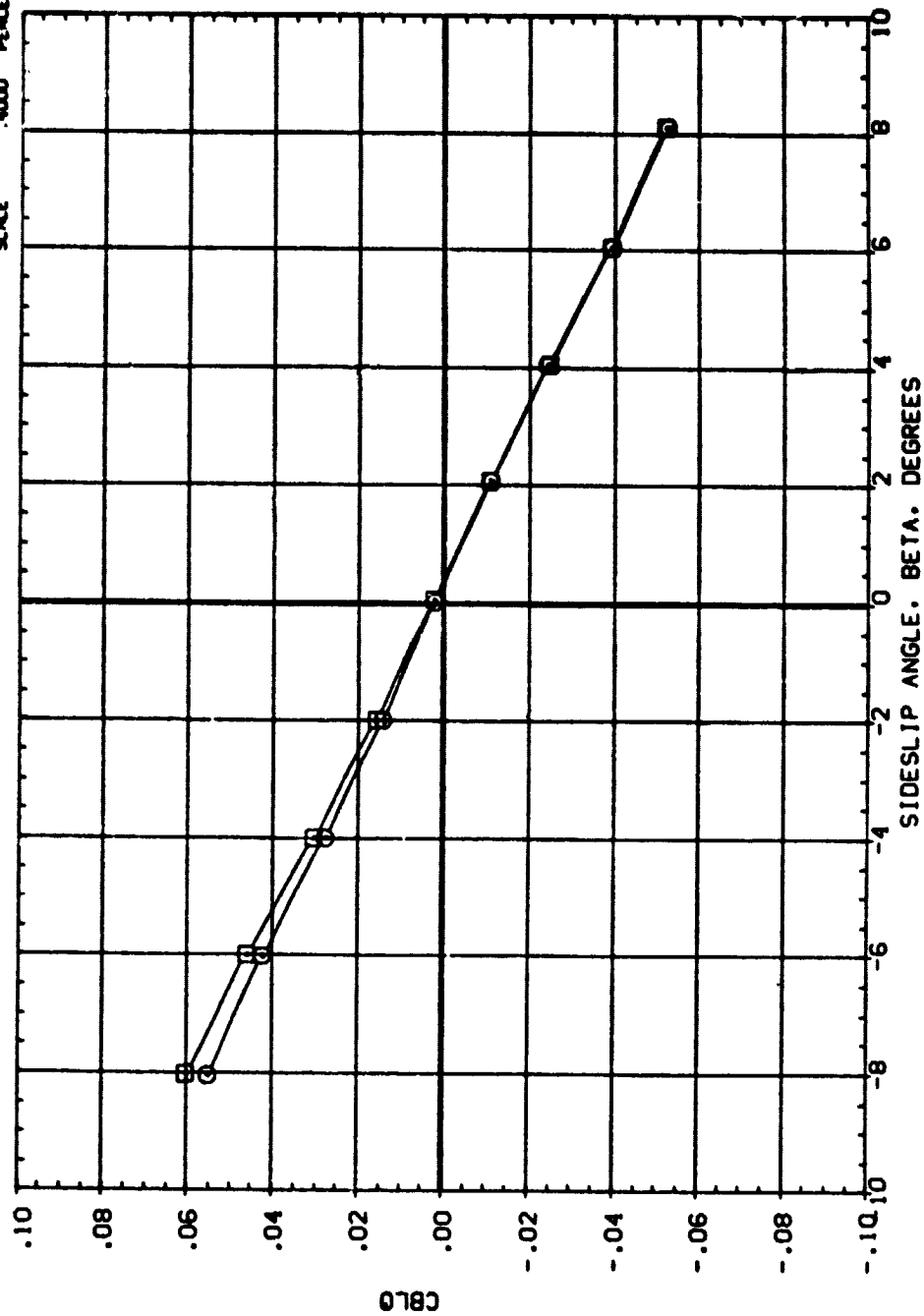


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.25

DATA SET SYMBOL: **Q** CONFIGURATION DESCRIPTION:
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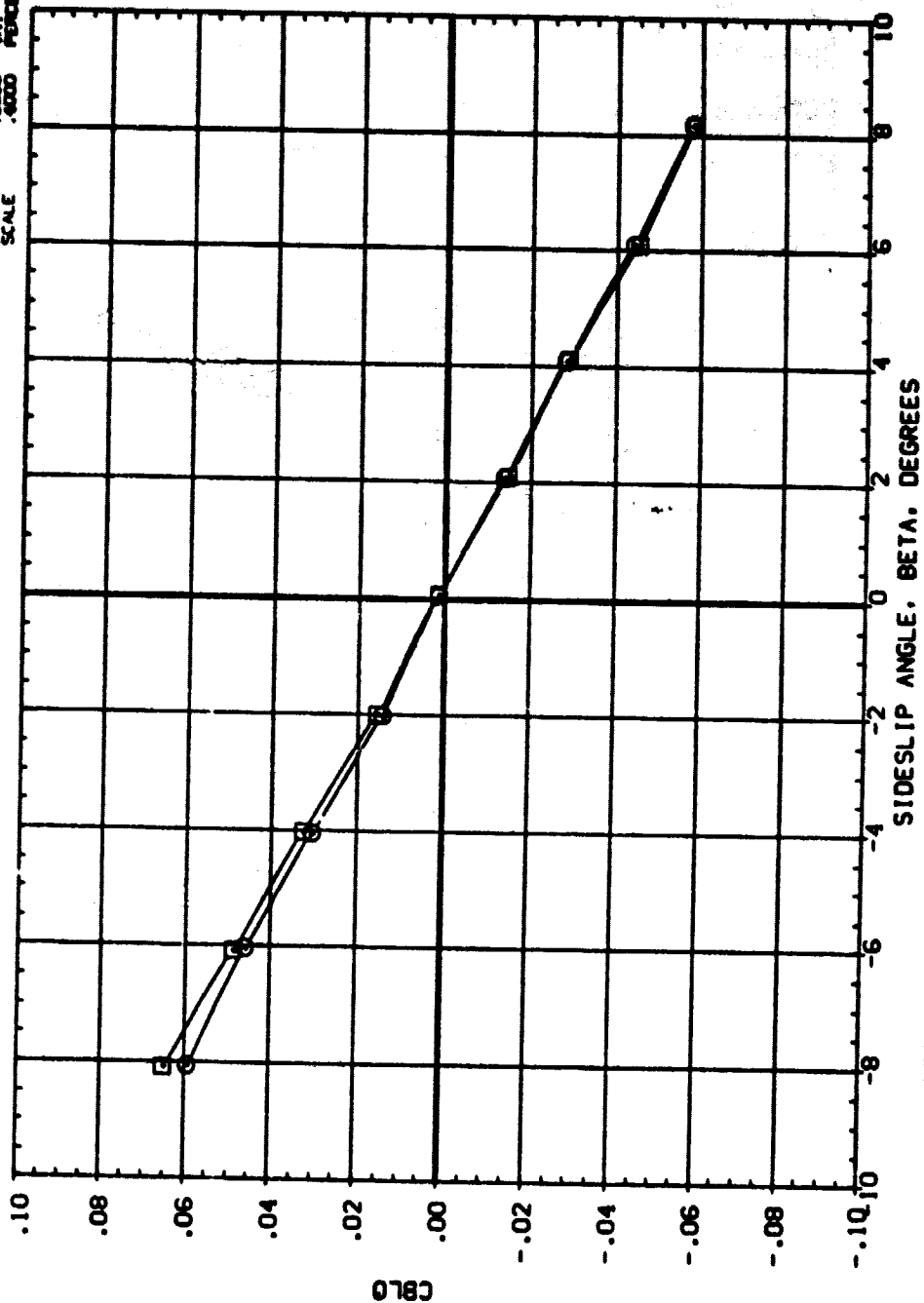


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: 8
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REFERENCE INFORMATION
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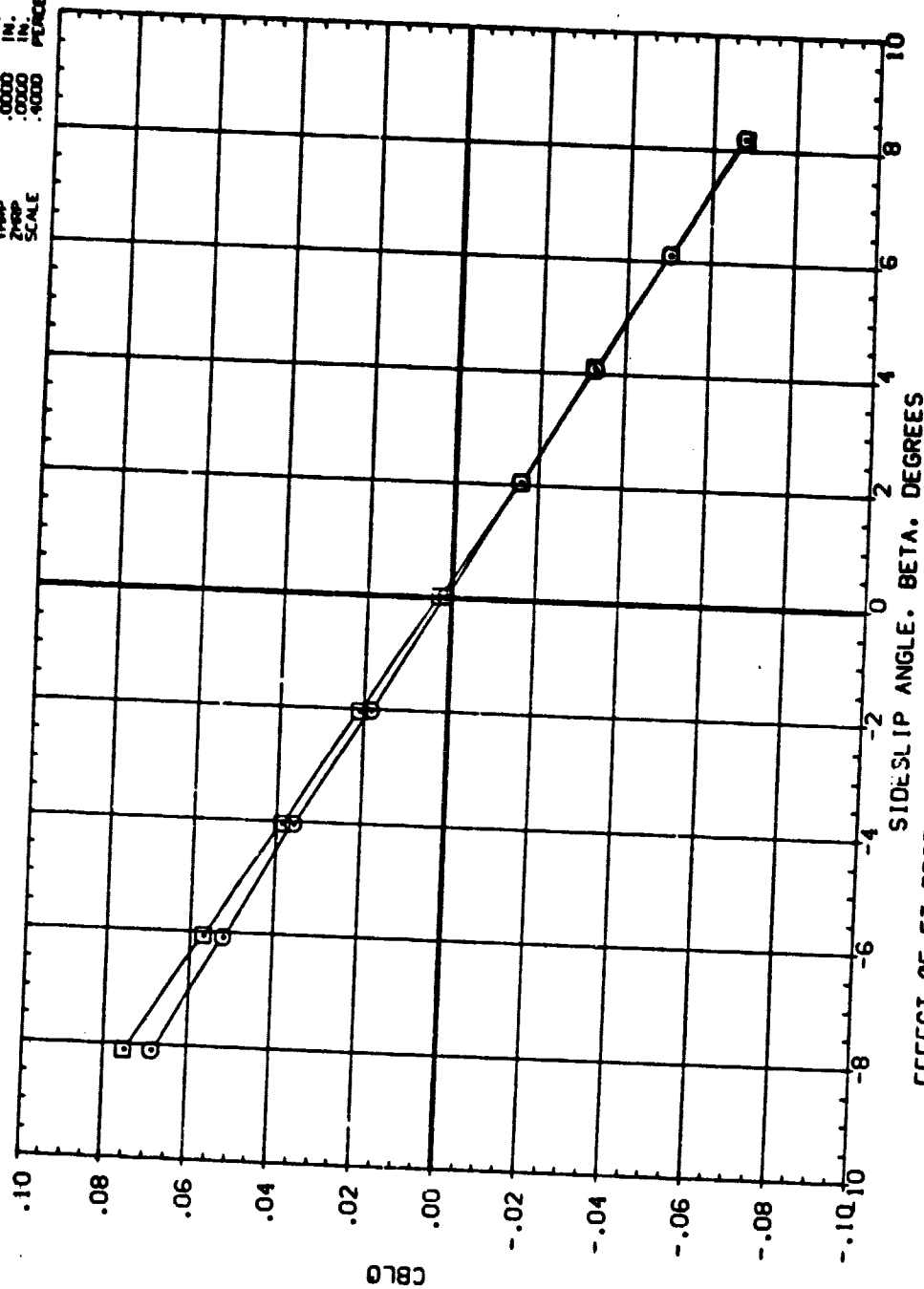


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL: B
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 (FA2805) (FA2809)

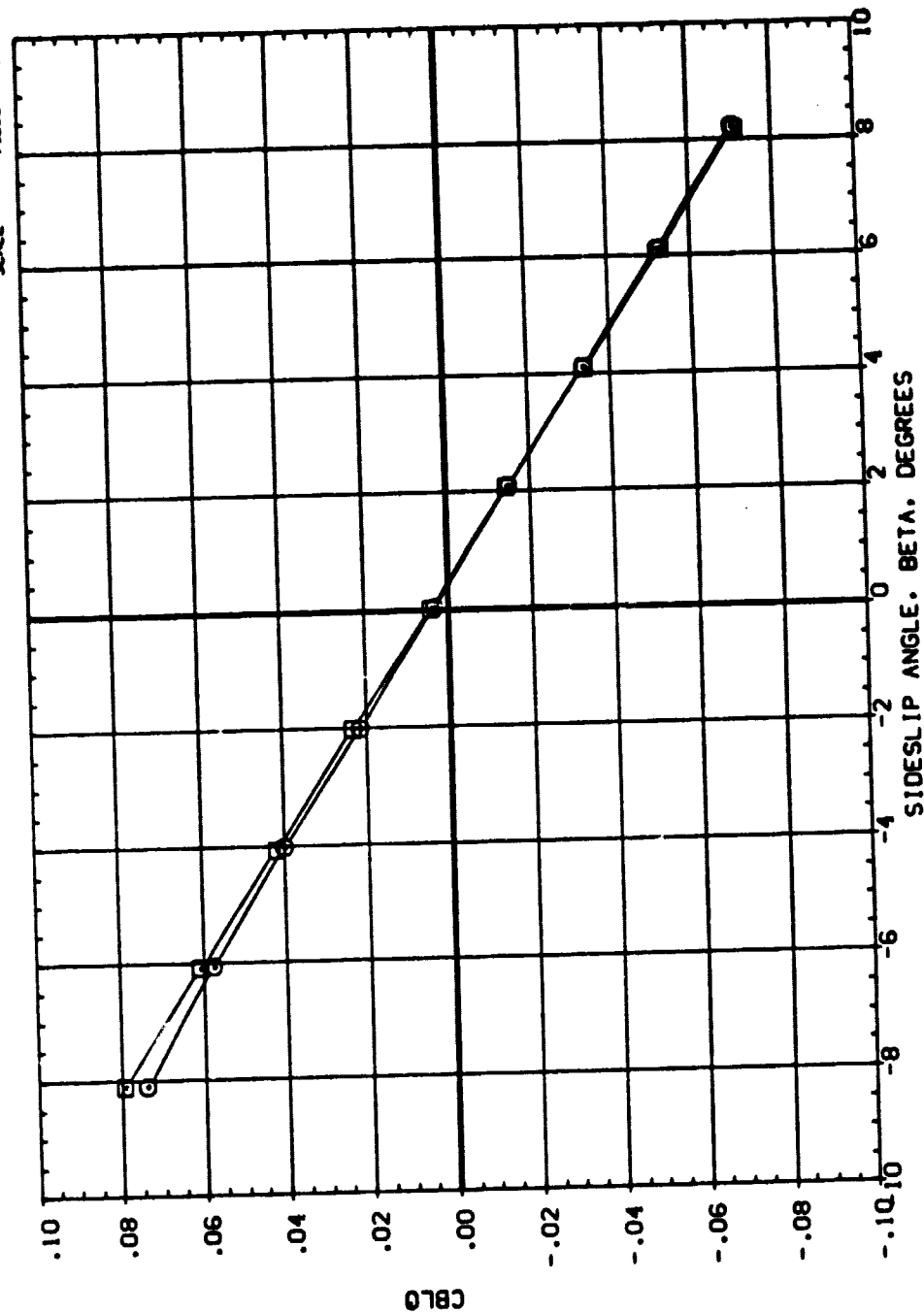
REFERENCE INFORMATION
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 YARP: .0000 IN.
 ZARP: .0000 IN.
 SCALE: .4000 PERCENT



EFFECT OF ET PROTUBERANCES
 (C)MACH = 1.05

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28. MSFC TVT 656. CONF 10. C2V2E2APAA1T353
 (FA2805) FA28. MSFC TVT 656. CONF 10. C2V2E2APAA1T353
 (FA2805)

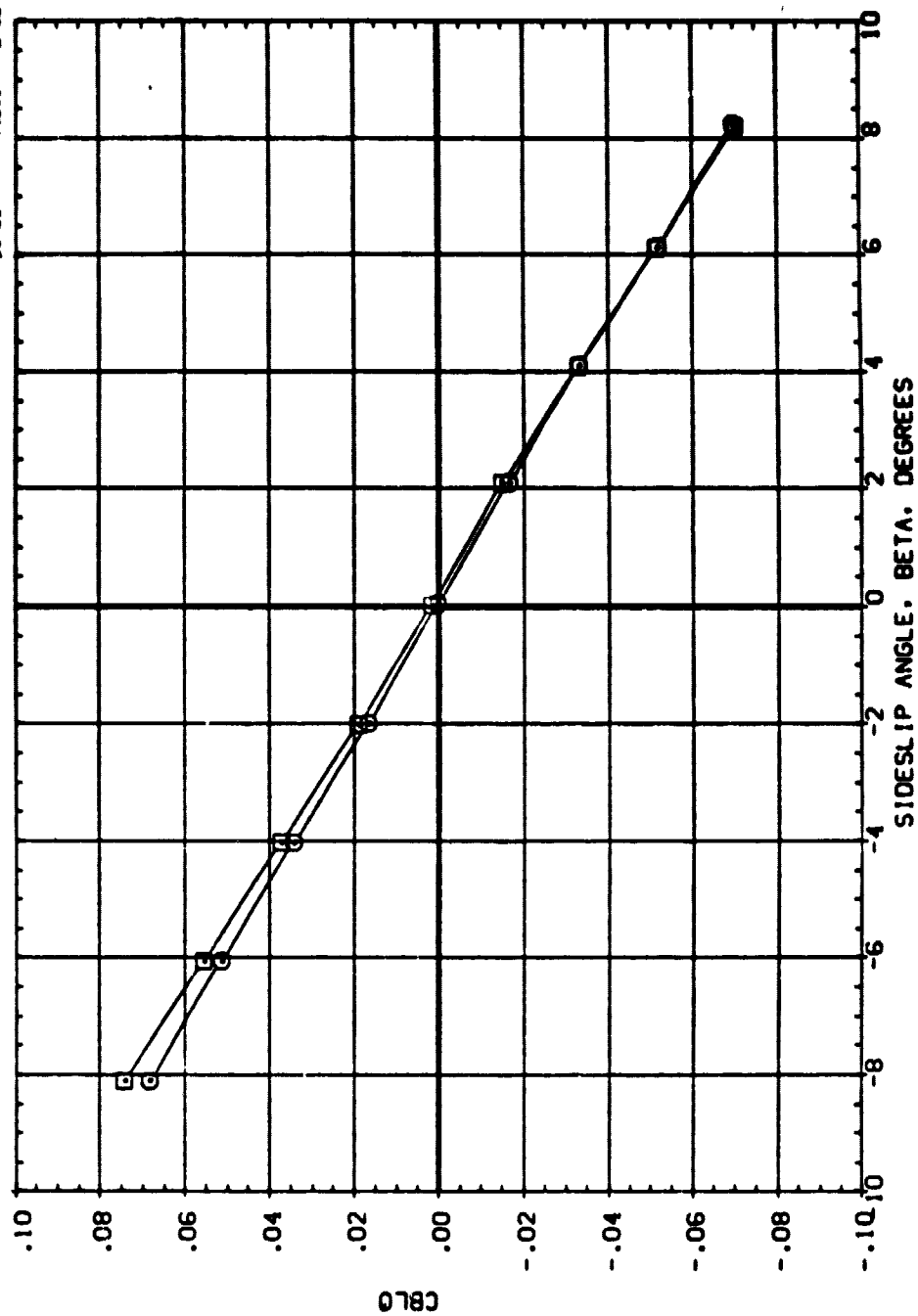
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 WREF 2.7170 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



EFFECT OF ET PROTUBERANCES

(D)MACH = 1.10

REFERENCE INFORMATION	
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BRES	3.7470 IN.
WRES	2.7120 IN.
WRES	.0000 IN.
WRES	.0000 IN.
SCALE	.0000 PERCH

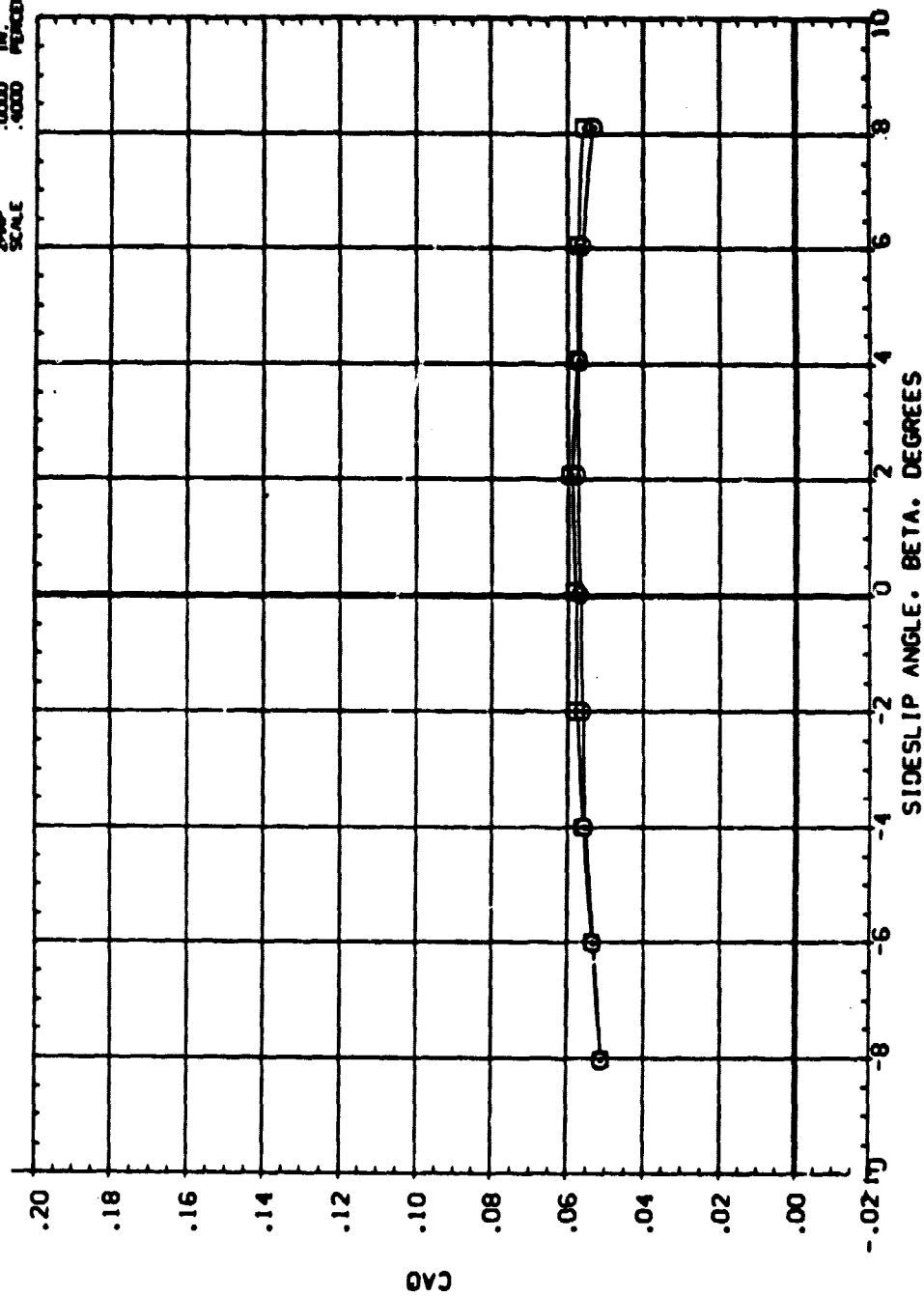


EFFECT OF ET PROTUBERANCES

$$(E)MACH = 1.25$$

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
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(FAZ809)	FAZ8. MFTC TWT 636. CONFIG.

REFERENCE INFORMATION	
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LINE	5.1612 IN.
REF	3.7470 IN.
REF	2.7120 IN.
PROP	.0000 IN.
PROP	.0000 IN.
SCALE	.0000 IN.

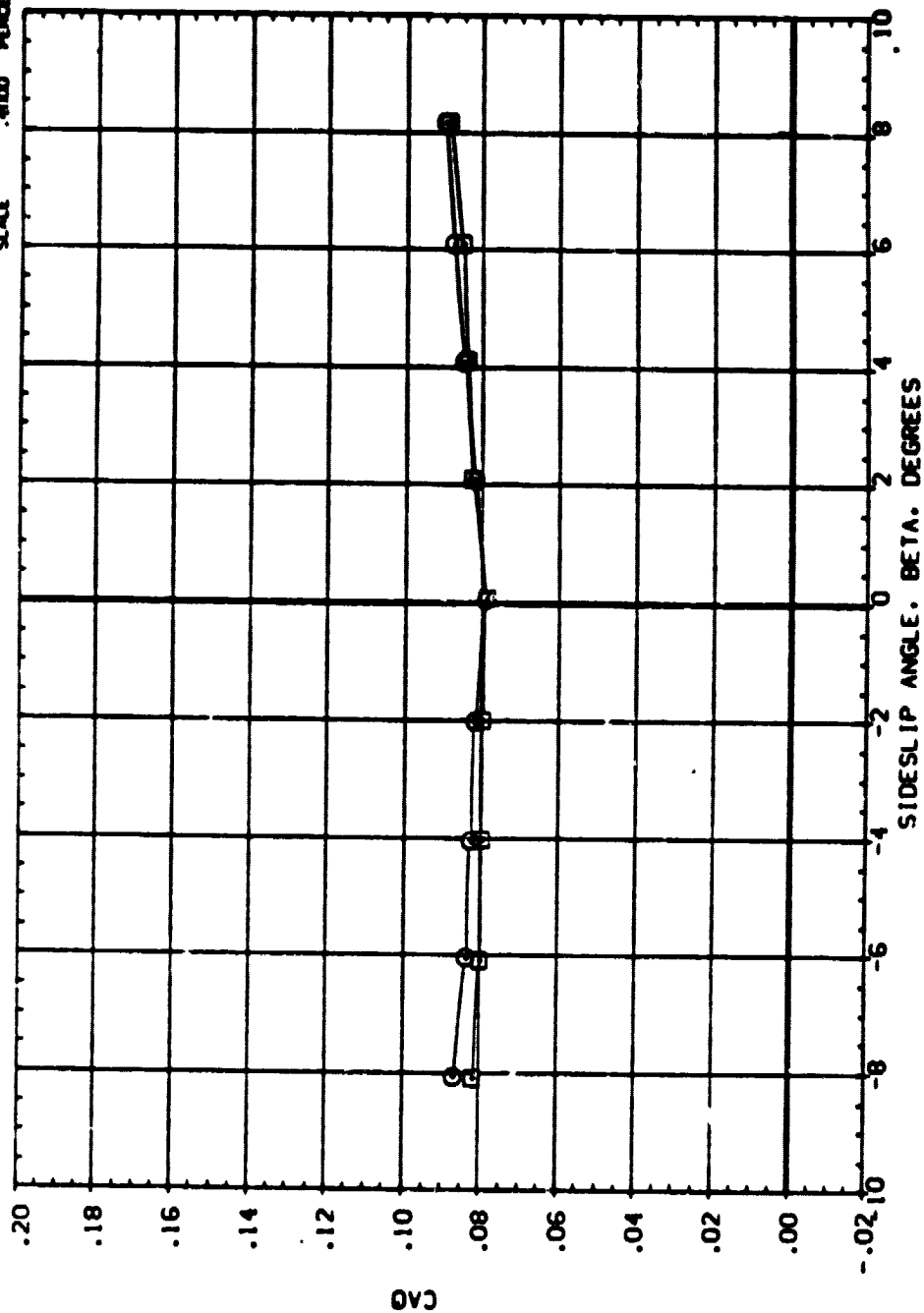


EFFECT OF ET PROTUBERANCES

$$(A)MACH = .60$$

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA2B. MSFC TWT 656. CONF 16. EDGE 20MM/1233
 FA2B. MSFC TWT 656. CONF 16. EDGE 20MM/1233

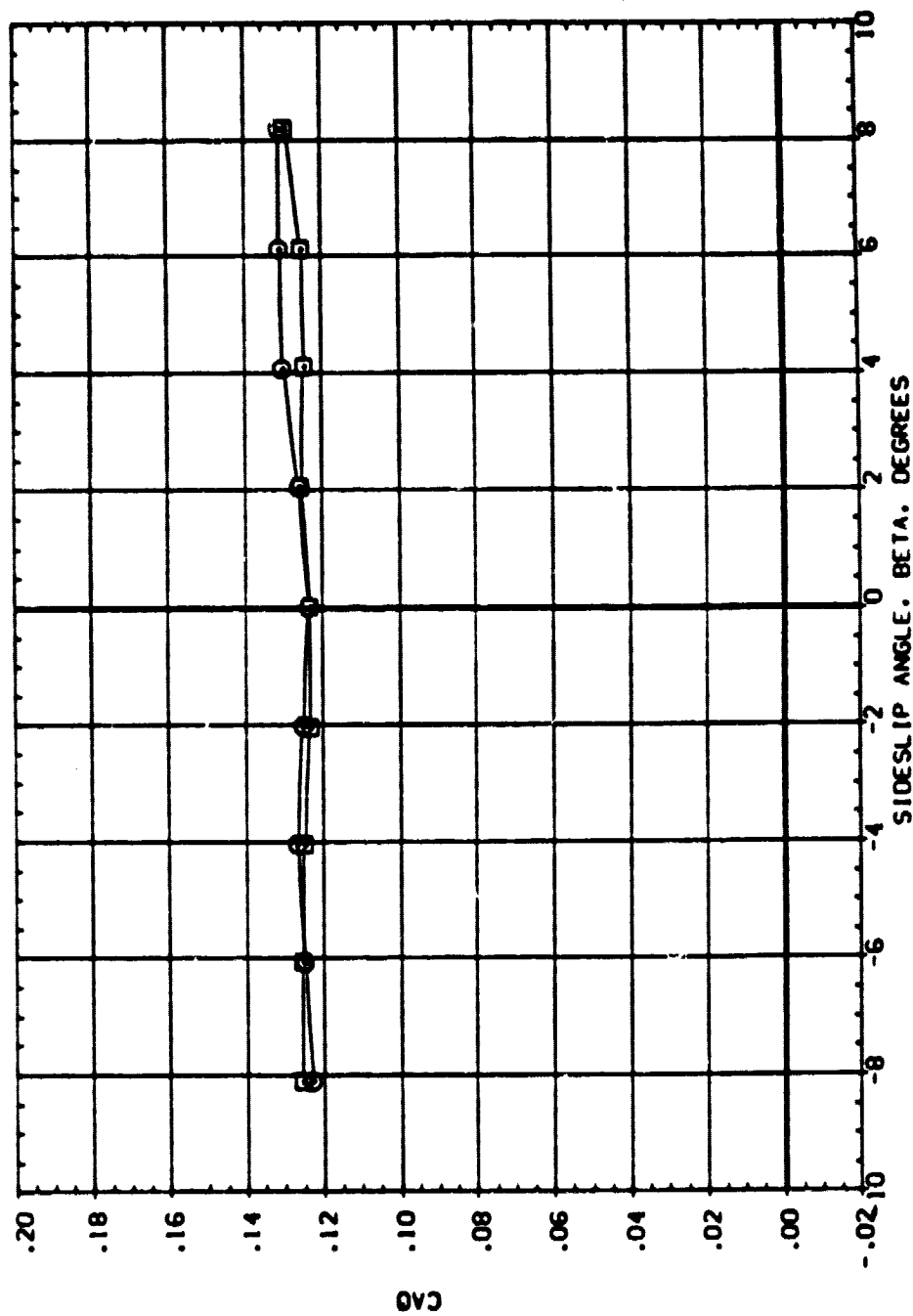
REFERENCE INFORMATION
 SET: 8.1980 50. IN
 UNIT: 5.1617 IN.
 REF: 3.7470 IN.
 WPP: 2.7120 IN.
 TWP: .0000 IN.
 SCALE: .0000 PERCH



EFFECT OF ET PROTUBERANCES

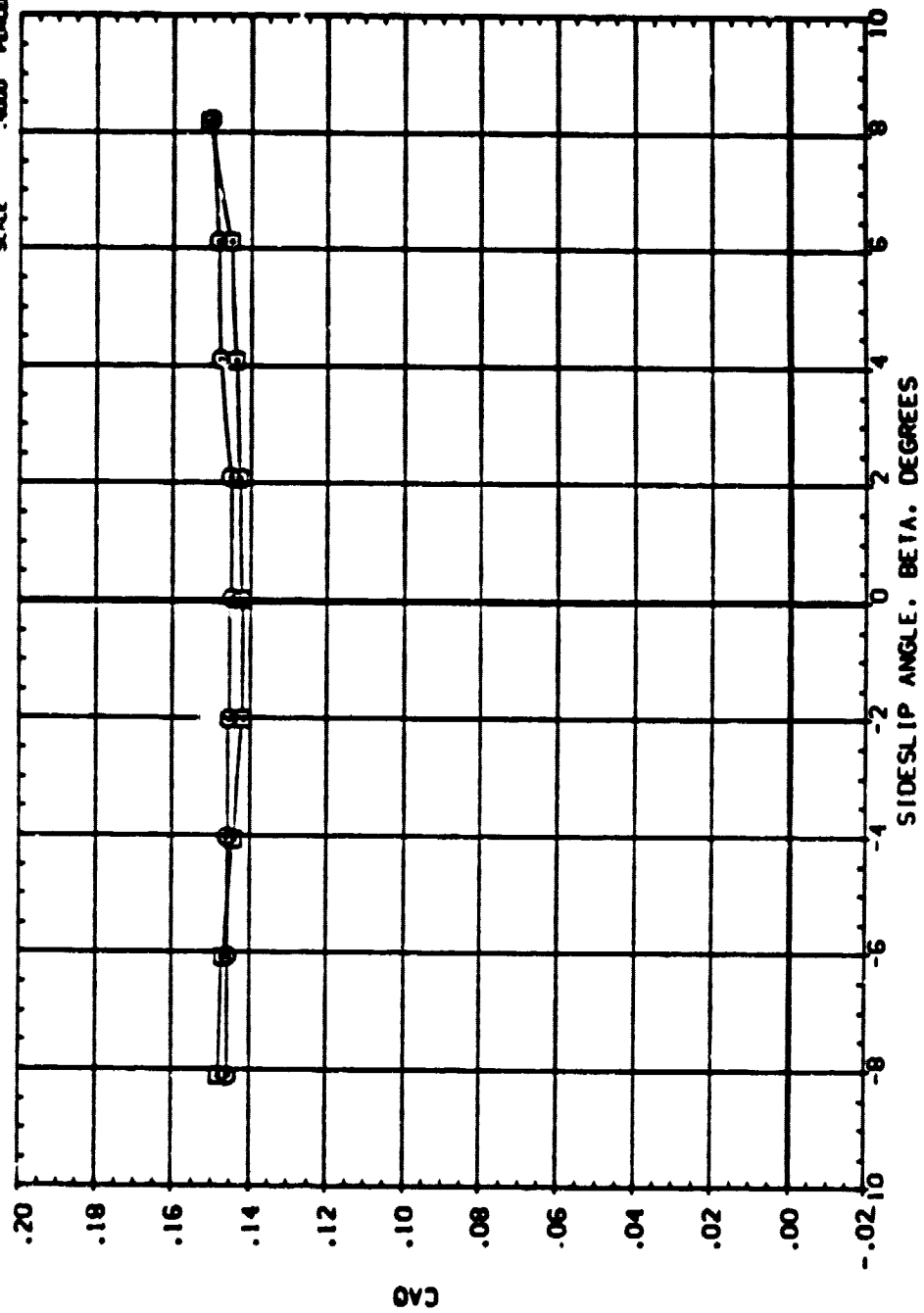
(B)MACH = .90

SECT	6.1980	SO.	IN.
LAB	5.1612	IN.	
SECT	2.7470	IN.	
SECT	2.7120	IN.	
WSP	.0000	IN.	
WSP	.0000	IN.	
SCALE	.0000	POUNDS	



EFFECT OF ET PROTUBERANCES
(C)MACH = 1.05

SCALE	NUMBER	PERCENT
500	6,180	30
400	9,112	44
300	2,740	13
200	2,710	13
100	0,000	0
50	0,000	0
20	0,000	0
10	0,000	0

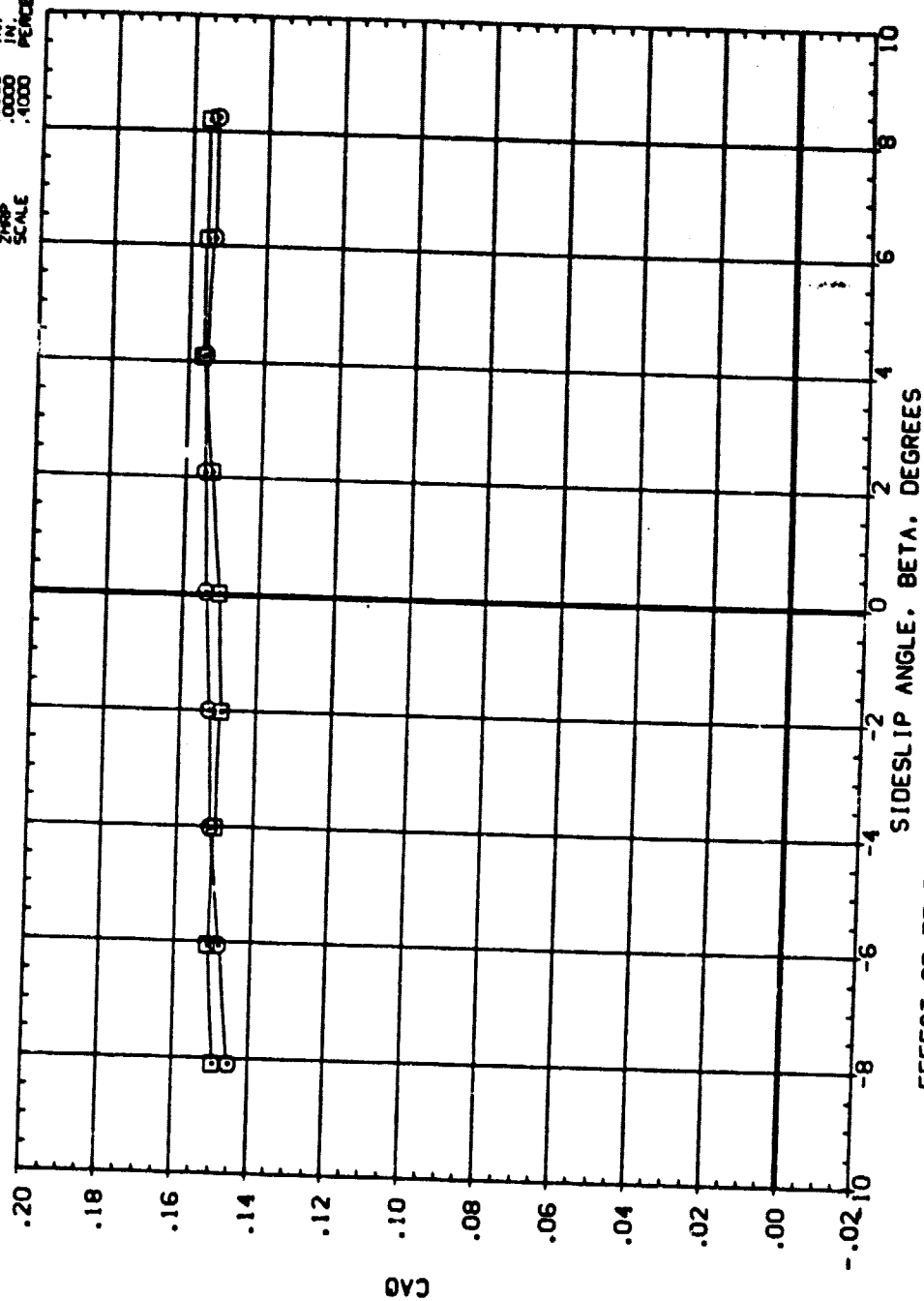


EFFECT OF ET PROTUBERANCES

(0)MACH = 1.10

DATA SET SYMBOL: (FA2805)
 CONFIGURATION DESCRIPTION: FA28. MSFC TVT 555. CONF 16. GUNZE 2000A11733
 FA28. MSFC TVT 556. CONF 16. GUNZE 2000A11733

REFERENCE 1. ORINATION
 SREF 6.1960 50. IN.
 LREF 3.1612 IN.
 MREF 2.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

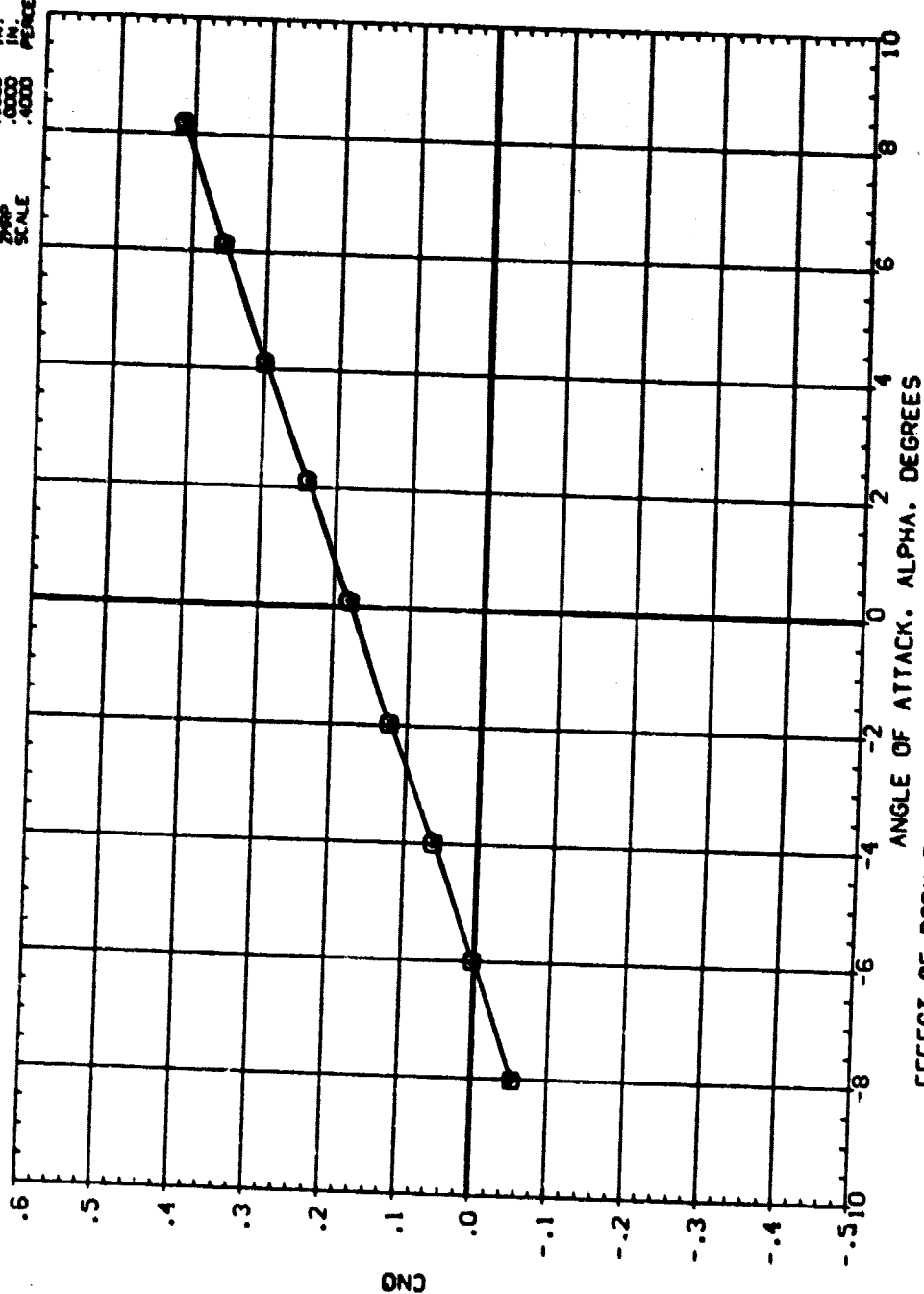


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.25


DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28. MSFC TUT 656. CONF 16. COVEZ 200PAAT1263
 (FA2808) (FA2810) (FA2813)

REFERENCE INFORMATION
 REF 6.1280 50. IN
 LREF 5.1612 50. IN
 BREF 2.7476 50. IN
 WREF 2.7120 50. IN
 ZREF .0000 50. IN
 SCALE .4000 PERCENT

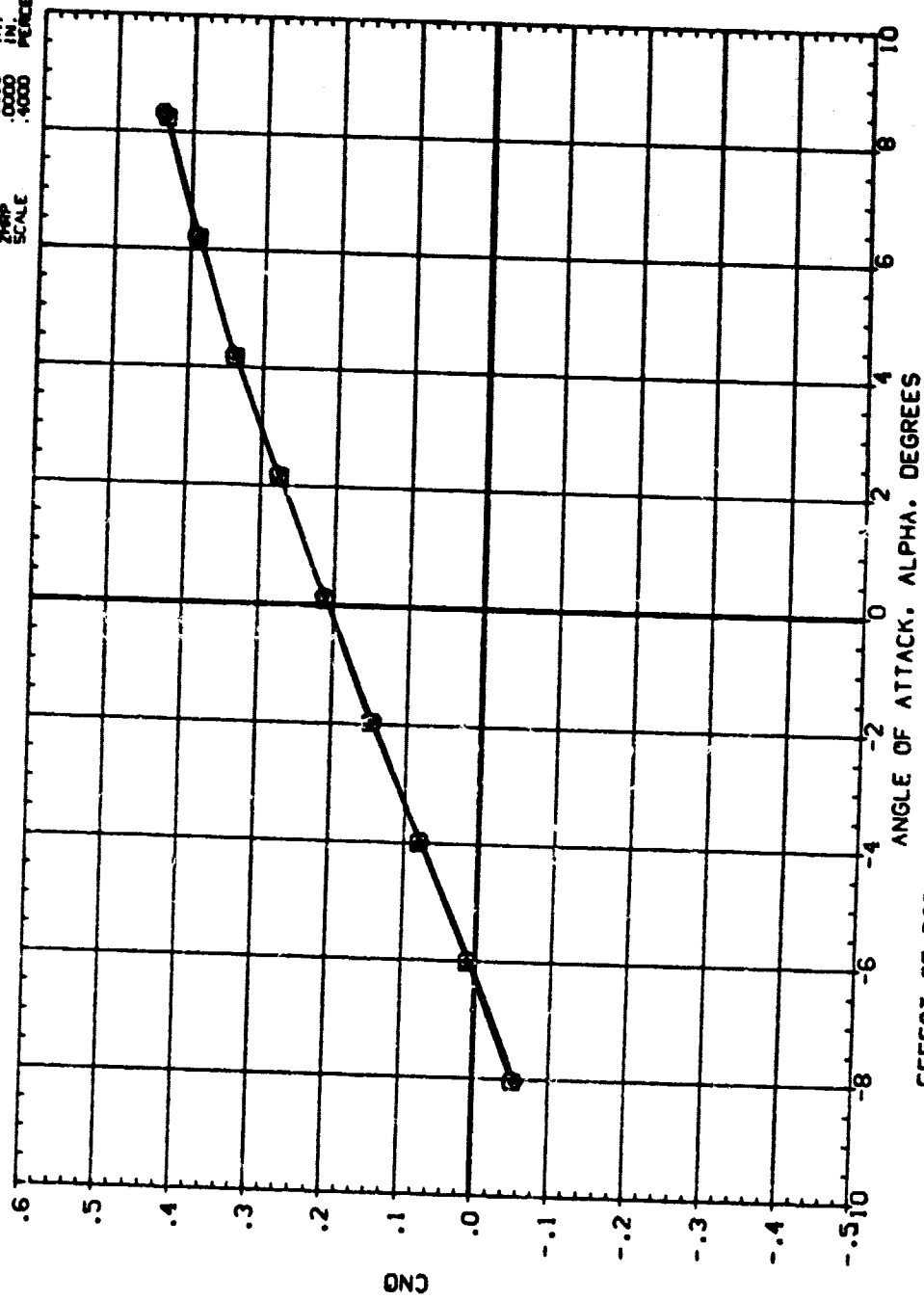


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FA2808) FA28, MSFC TVT 656, CONF 10, ORATE 200-PAAT1753
 (FA2810) FA28, MSFC TVT 656, CONF 10, ORATE 200-PAAT1753
 (FA2813) FA28, MSFC TVT 656, CONF 10, ORATE 200-PAAT1753

REFERENCE INFORMATION:
 REF: 8.1980 90. IN.
 LIFT: 3.1612 IN.
 DRAG: 2.7470 IN.
 YPRP: 2.7120 IN.
 ZPRP: .0000 IN.
 SCALE: .0000 PERCENT

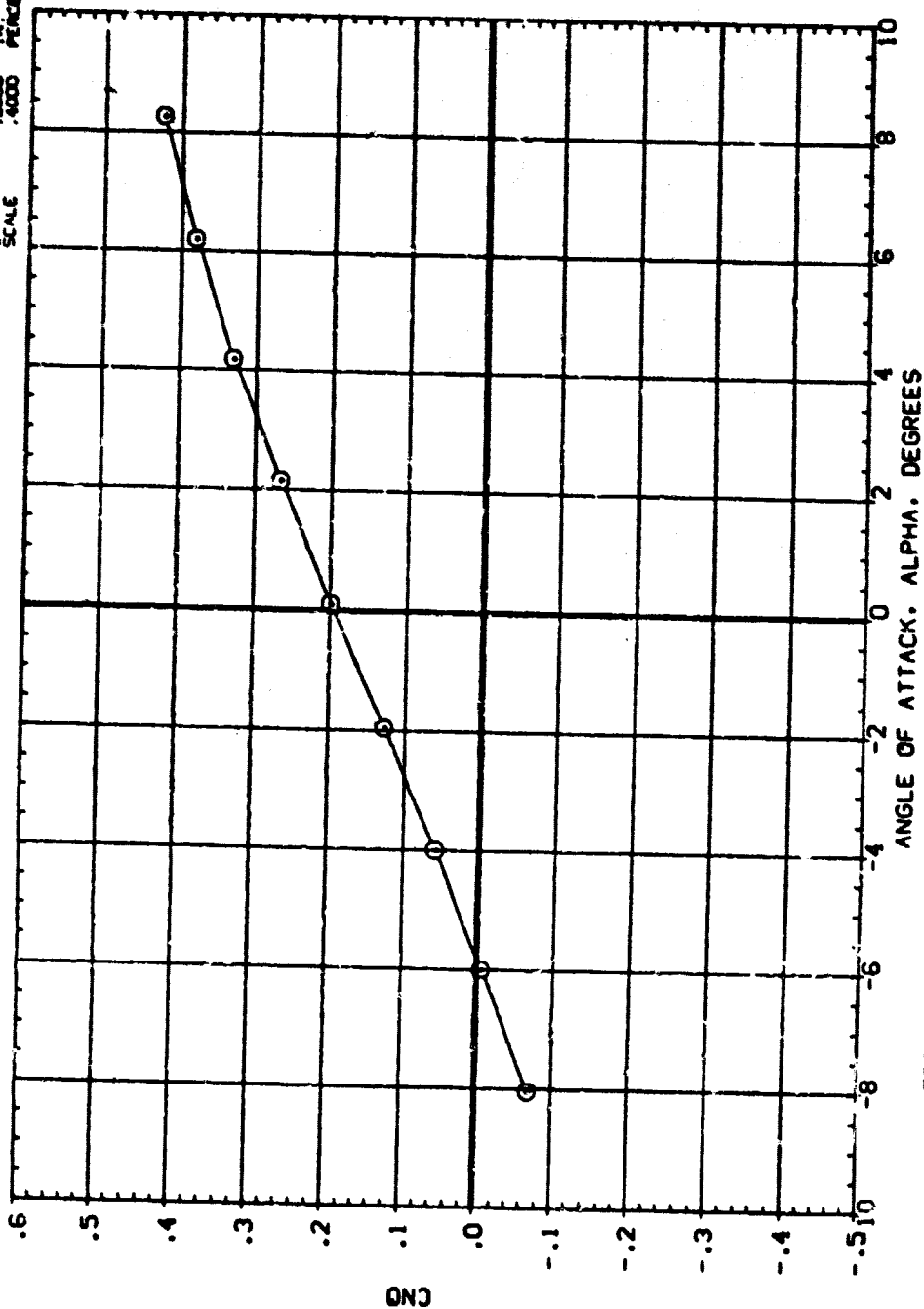


EFFECT OF BODY FLAP

(B)MACH = .90


DATA SET SYMBOL: FA2808
 CONFIGURATION DESCRIPTION: FA2808, 457C, TVT 655, CONFIG. 000220PAAT133
 (FA2810) DATA NOT AVAILABLE
 (FA2813) DATA NOT AVAILABLE

REFERENCE INFORMATION
 REF: 9.1960 30. IN.
 LIFT: 3.1612 IN.
 DRAG: 2.7470 IN.
 YARP: 2.7120 IN.
 ZARP: .0000 IN.
 SCALE: .4000 PERCENT

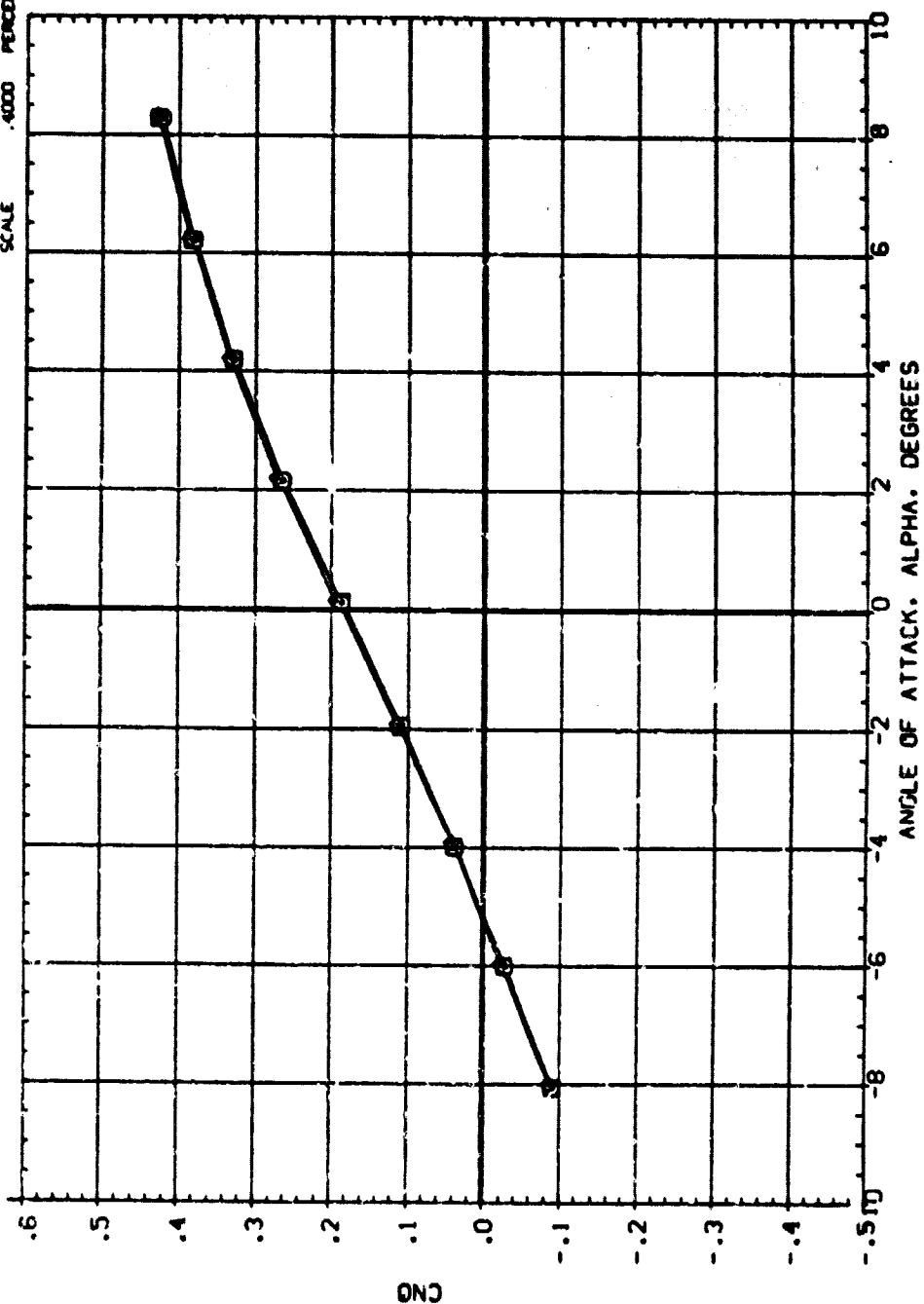


EFFECT OF BODY FLAP

(C)MACH = .95

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION: FA2B: MSFC TWT 550. CONF 16. ONZE: PPA11253
 (FA2B08) (FA2B10) (FA2B13) FA2B: MSFC TWT 550. CONF 16. ONZE: PPA11253
 FA2B: MSFC TWT 550. CONF 16. ONZE: PPA11253

REFERENCE INFORMATION
 SREF 6.1960 SO. IN
 LREF 5.1612 IN.
 BREF 2.7470 IN.
 XREF .0000 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

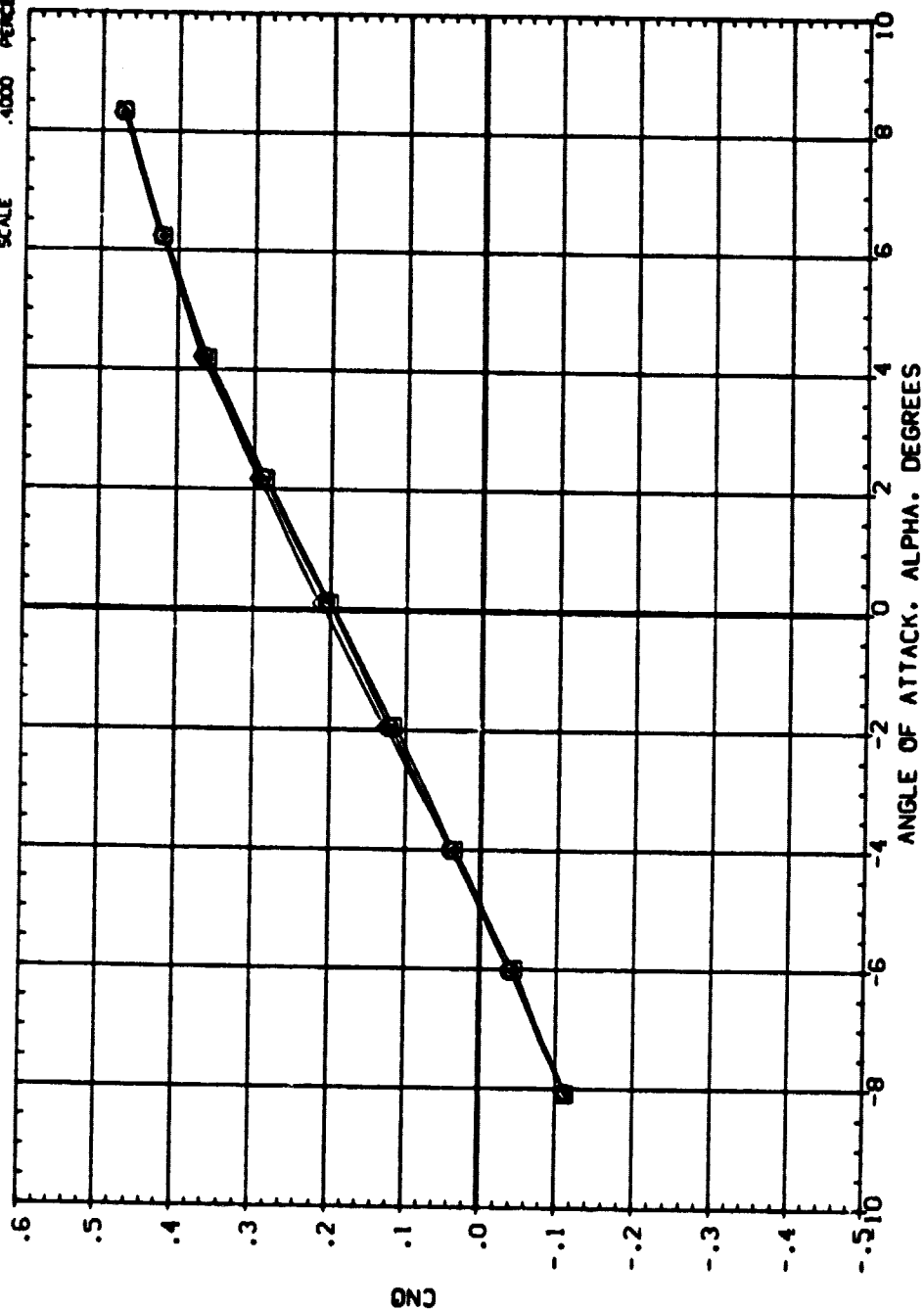


EFFECT OF BODY FLAP

(0)MACH = 1.05

DATA SET SYMBOL: \emptyset CONFIGURATION DESCRIPTION:
 (FA2808) FA28. MGFC TWT 656. CONF IG. 00VEZPMPAT133
 (FA2810) FA28. MGFC TWT 656. CONF IG. 00VEZPMPAT133
 (FA2813) FA28. MGFC TWT 656. CONF IG. 00VEZPMPAT133

REFERENCE INFORMATION:
 SREF 6.1920 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

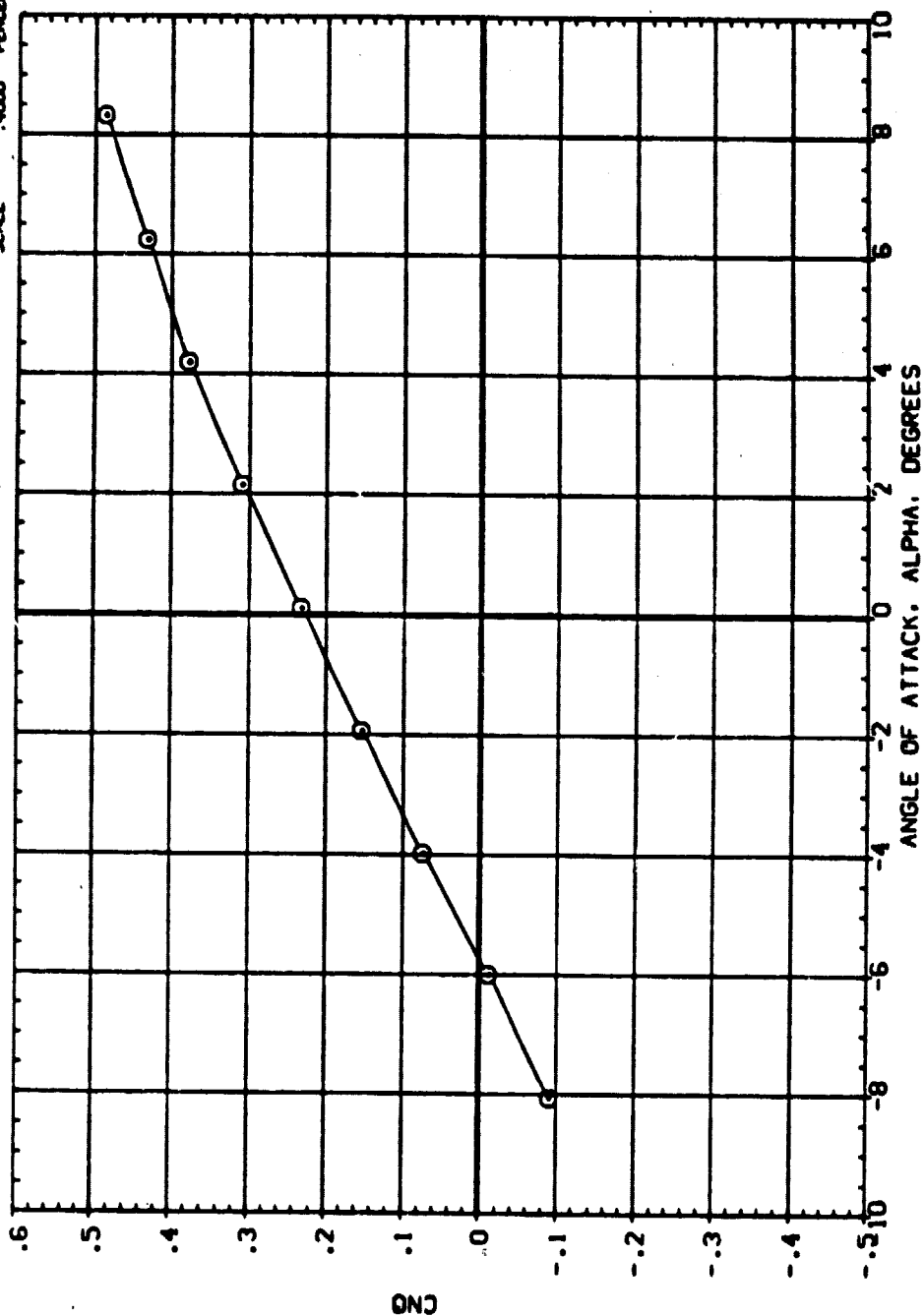


EFFECT OF BODY FLAP

(C)MACH = 1.10

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA2B, MFC, TWT 65%, CONFIG. 0002300A11353
 (FA2B8) DATA NOT AVAILABLE
 (FA2B10) DATA NOT AVAILABLE
 (FA2B13)

REFERENCE INFORMATION:
 REF: 6.1980 50. IN
 LIFT: 5.1612 IN.
 DRAG: 2.7470 IN.
 YAW: .0000 IN.
 ROLL: .0000 IN.
 SCALE: .4000 PERCENT

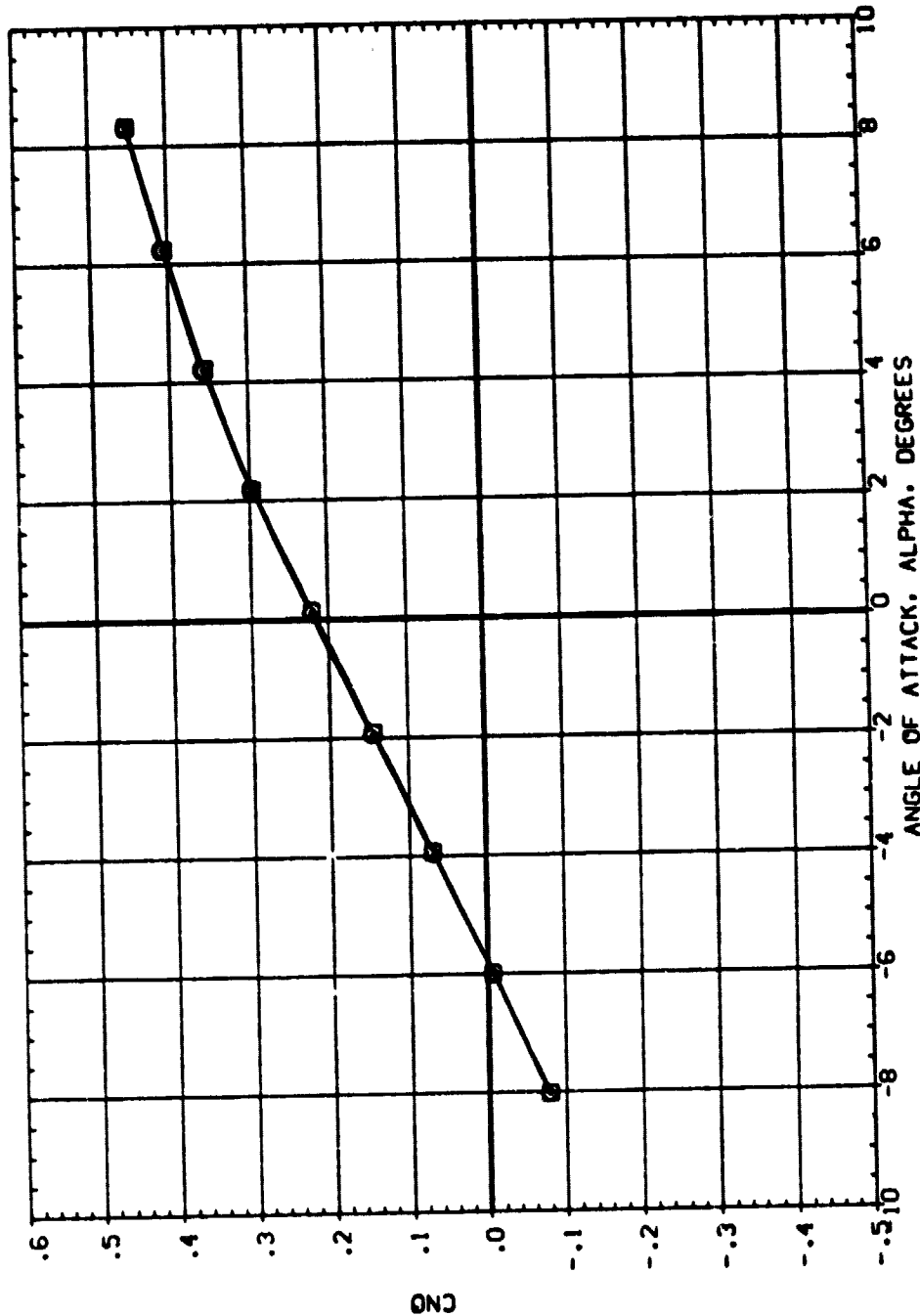


EFFECT OF BODY FLAP

(F)MACH = 1.15

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2808) FA28. MSFC TVT 656. CONF 1G. GUNZE 2000001253
 (FA2810) FA28. MSFC TVT 656. CONF 1G. GUNZE 2000001253
 (FA2813) FA28. MSFC TVT 656. CONF 1G. GUNZE 2000001253

REFERENCE INFORMATION
 SET 6.1980 50. IN
 LIFT 5.1612 IN.
 DRIFT 3.7476 IN.
 YAWP 2.7120 IN.
 ZWAP .0000 IN.
 SCALE .0000 PERCENT

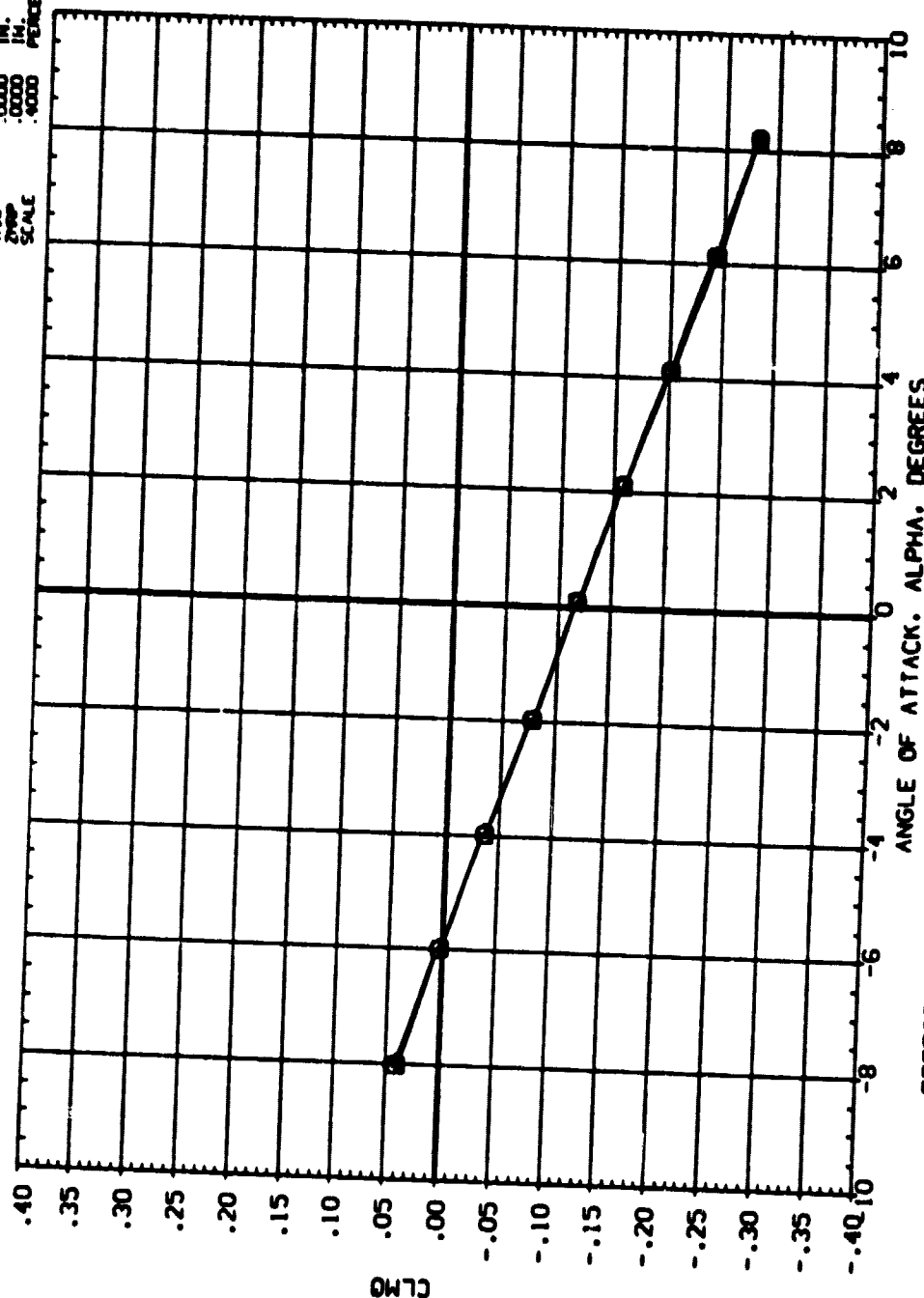


EFFECT OF BODY FLAP

(G)MACH = 1.25

DATA SET SYMBOL: 0
 CONFIGURATION DESCRIPTION:
 (FA20) FA20. MSFC INT SIZE: CD41G. CD422PMATT33
 (FA20) FA20. MSFC INT SIZE: CD41G. CD422PMATT33
 (FA20) FA20. MSFC INT SIZE: CD41G. CD422PMATT33

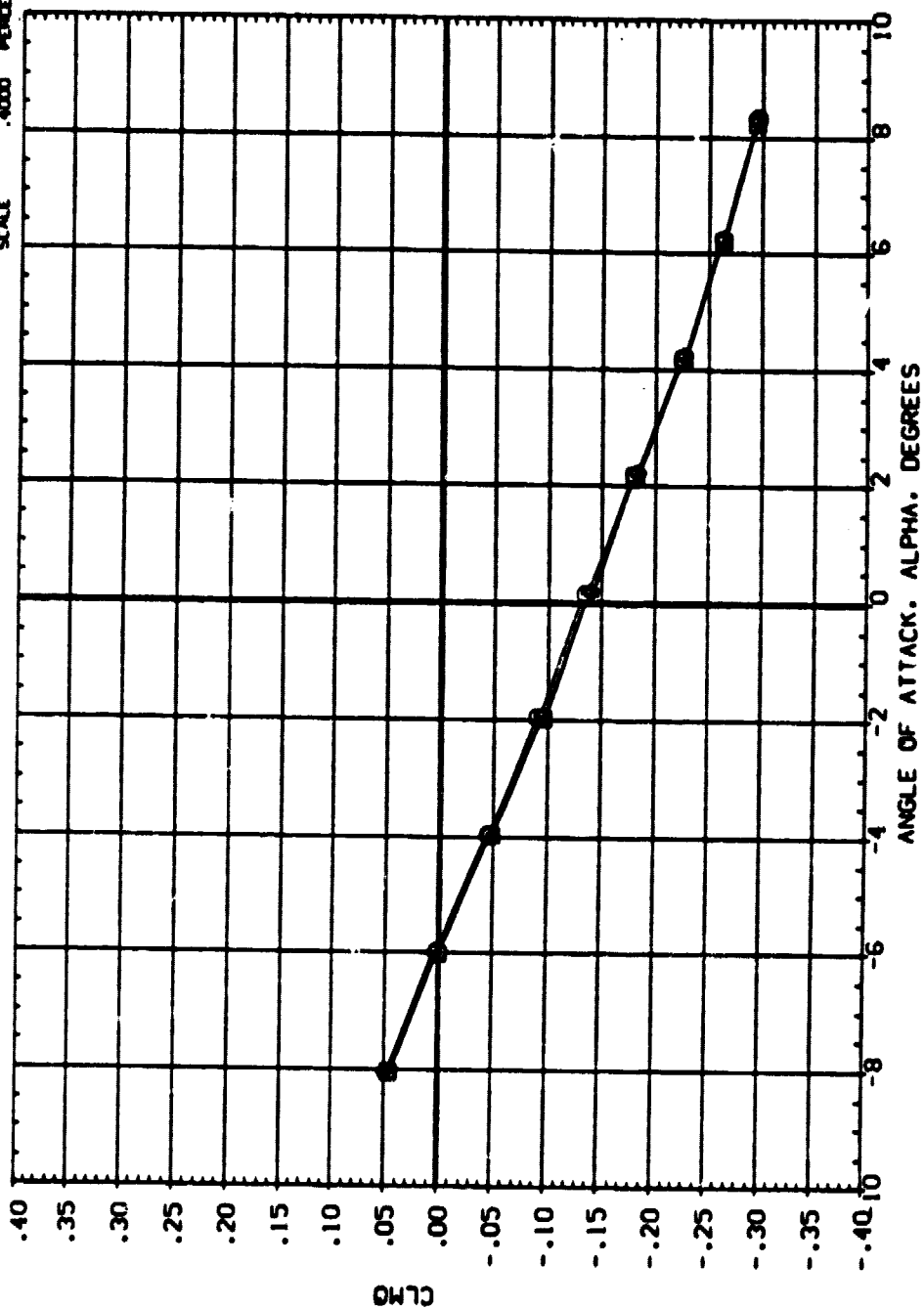
REFERENCE INFORMATION
 REF: 5.1580 90. IN
 LREF: 5.1612 90. IN
 BREF: 3.7470 90. IN
 YREF: 2.7120 90. IN
 ZREF: .0000 90. IN
 SCALE: .0000 PERCENT



EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL: 8
 (FA2008) (FA2010) (FA2013)
 CONFIGURATION DESCRIPTION:
 FA20: MFTC TVT 656: CONF 16: GENVEZMPHAT133
 FA20: MFTC TVT 656: CONF 16: GENVEZMPHAT133
 FA20: MFTC TVT 656: CONF 16: GENVEZMPHAT133
 REFERENCE INFORMATION:
 SREF: 6.1980 50. IN.
 LREF: 5.1612 IN.
 MREF: 3.7470 IN.
 WREF: 2.7120 IN.
 TREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT

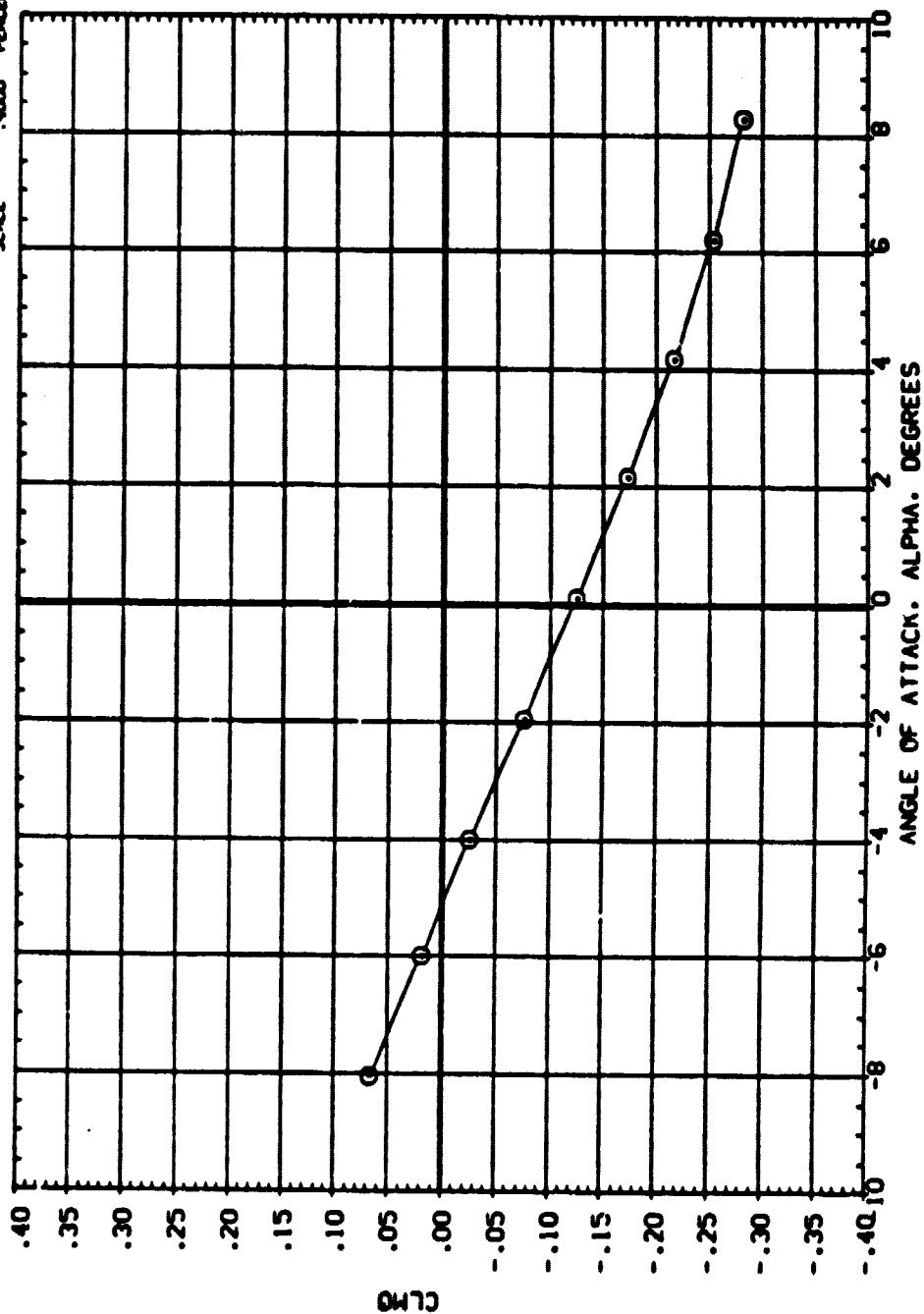


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(FAZ808)	FAZ8. MFT. TVT 635. CDF 16.
(FAZ810)	DATA NOT AVAILABLE
(FAZ813)	DATA NOT AVAILABLE

REF	6.180	SD.	IN.
LAST	5.1612	IN.	
REF	3.7470	IN.	
REF	2.7120	IN.	
REF	.0000	IN.	
REF	.0000	IN.	
SCALE	.0000	PERCENT	

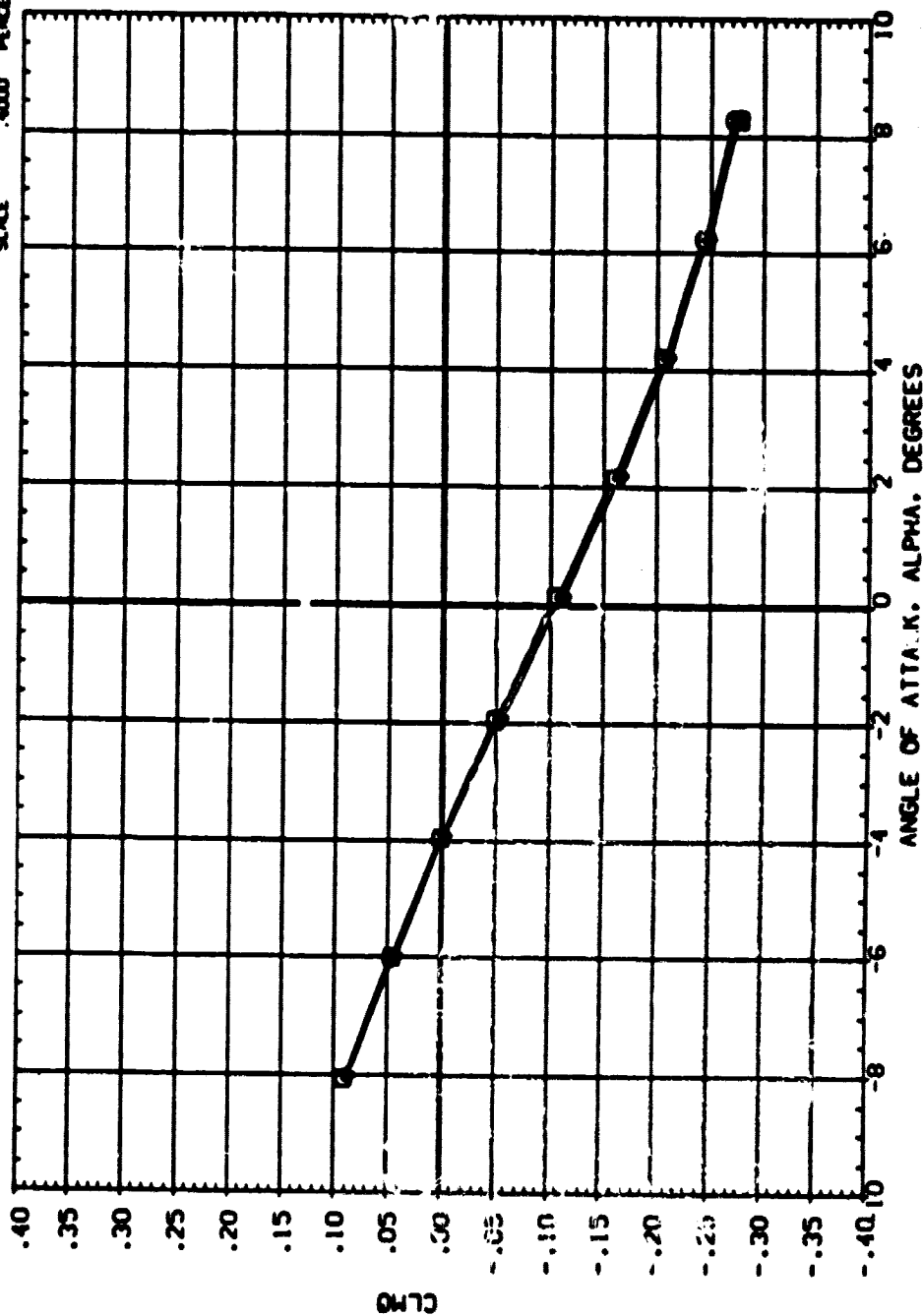


EFFECT OF BODY FLAP

(C)MACH = .95

DATA SET SWER. CONFIRMATION DESCRIPTION
 (FA308) 8 FA308. MFC TWT 655. CDW. CDWZPMATT1253
 (FA310) 8 FA310. MFC TWT 655. CDW. CDWZPMATT1253
 (FA311) 8 FA311. MFC TWT 655. CDW. CDWZPMATT1253

REFERENCE INFORMATION
 SET 1 1.20 90 IN
 LIFT 1 1.12 90 IN
 WING 2 2.7120 90 IN
 WING 2 2.7120 90 IN
 WING 2 2.7120 90 IN
 SCALE 10000 PERCENT

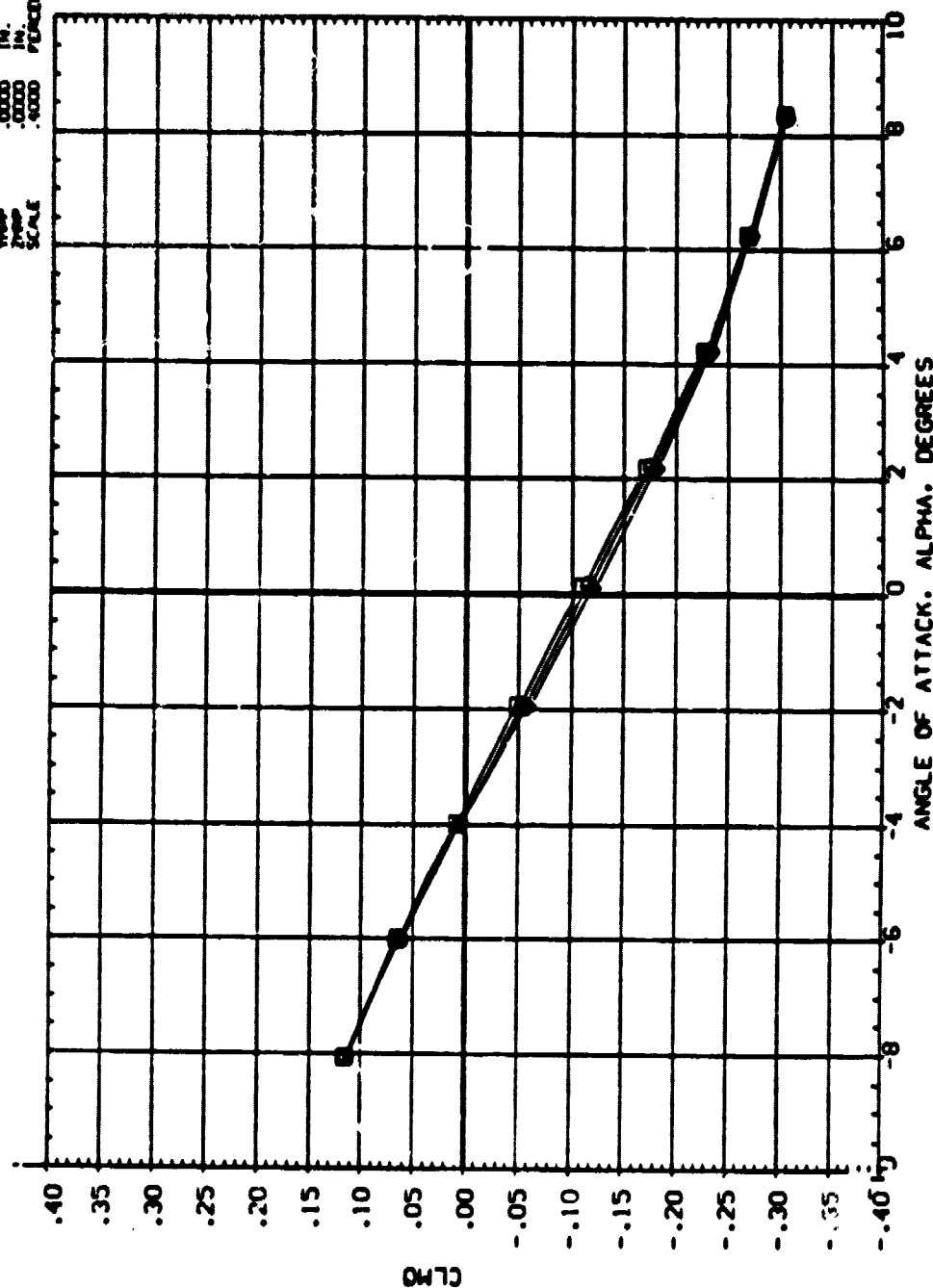


EFFECT OF BODY FLAP

(0)MACH = 1.05

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION:
 FA2B: HSPC TWT 65E: CONF 16: SIZE 20001133
 FA2B10: HSPC TWT 65E: CONF 16: SIZE 20001133
 FA2B13: HSPC TWT 65E: CONF 16: SIZE 20001133

REFERENCE INFORMATION:
 SET: 8.1980 10. IN
 LIFT: 5.1612 IN.
 DRAG: 2.7470 IN.
 TWRP: .0000 IN.
 SCALE: .0000 IN.
 PERCENT

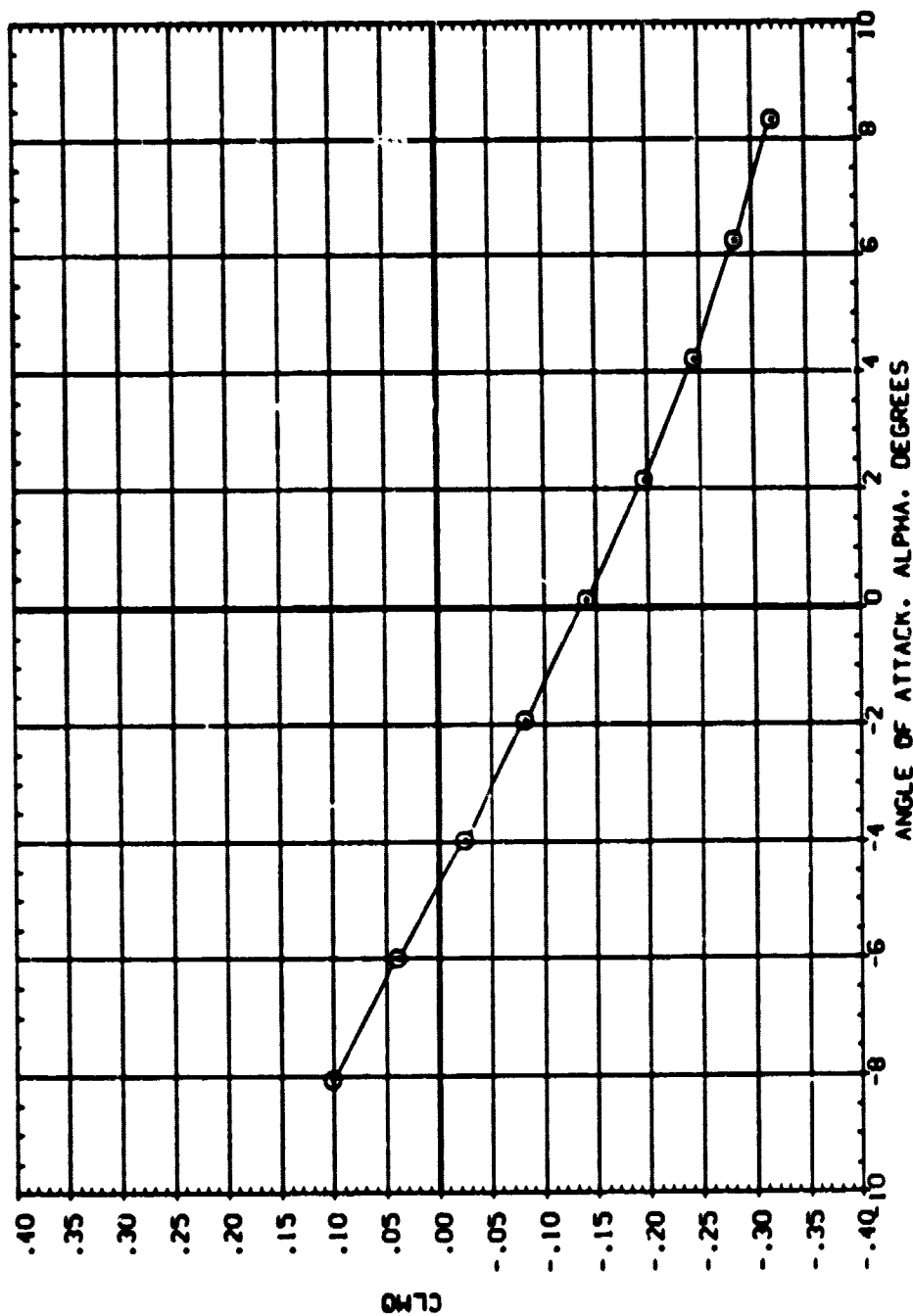


EFFECT OF BODY FLAP

(E)MACH = 1.10

DATA SET SWELL CONFIGURATION DESCRIPTION
 (PAGE 1) 8 6420- HPTC INT 852- CDF 16. OVERPARAMETERIZED
 (PAGE 10) 8 DATA NOT AVAILABLE
 (PAGE 13) 8 DATA NOT AVAILABLE

REFERENCE INFORMATION
 SET 8-1580 IN.
 LIFT 5.1612 IN.
 DRIP 3.7470 IN.
 WING 2.7120 IN.
 WING .0000 IN.
 ZAMP .0000 IN.
 SCALE .4000 PERCENT



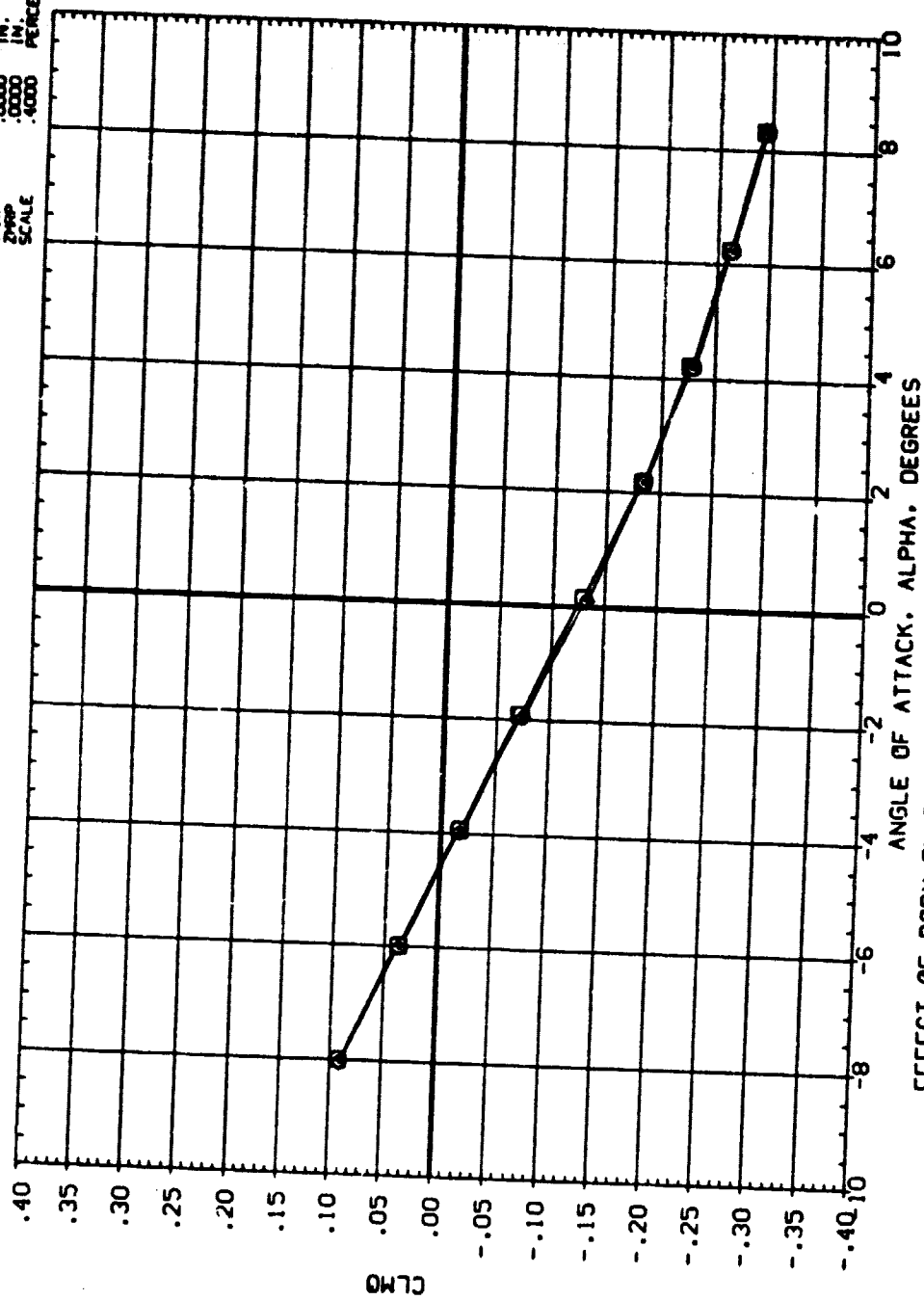
EFFECT OF BODY FLAP

(F)MACH = 1.15

DATA SET SYMBOL: 88
 (FA2808) FA28: MSC TVT 655: CDF IG: Q2V2E 204PA11253
 (FA2810) FA28: MSC TVT 655: CDF IG: Q2V2E 204PA11253
 (FA2813) FA28: MSC TVT 655: CDF IG: Q2V2E 204PA11253

CONFIGURATION DESCRIPTION

REFERENCE INFORMATION
 SREF 8.1800 50. IN
 LREF 3.1612 IN.
 BREF 3.7470 IN.
 YARP 2.7180 IN.
 ZARP .0000 IN.
 SCALE .4000 PERCENT

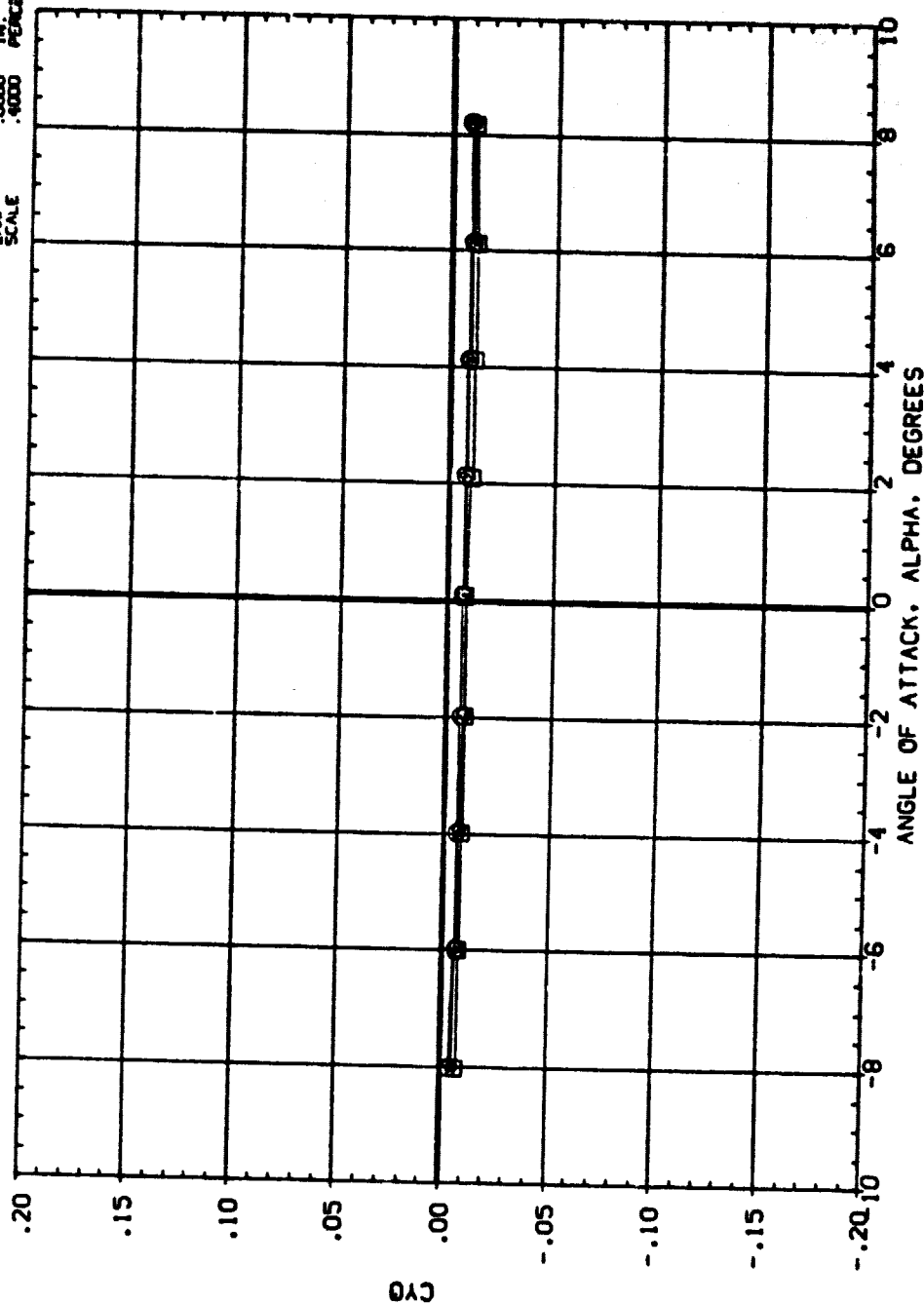


EFFECT OF BODY FLAP

(G)MACH = 1.25

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2808) FA28. MSFC TWT 856. CONF IG. 02VZ2PMPAATTJ53
 (FA2810) FA28. MSFC TWT 856. CONF IG. 02VZ2PMPAATTJ53
 (FA2813) FA28. MSFC TWT 856. CONF IG. 02VZ2PMPAATTJ53

REFERENCE INFORMATION
 REF 5.1800 90. IN
 LREF 3.1612 IN.
 MREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



EFFECT OF BODY FLAP

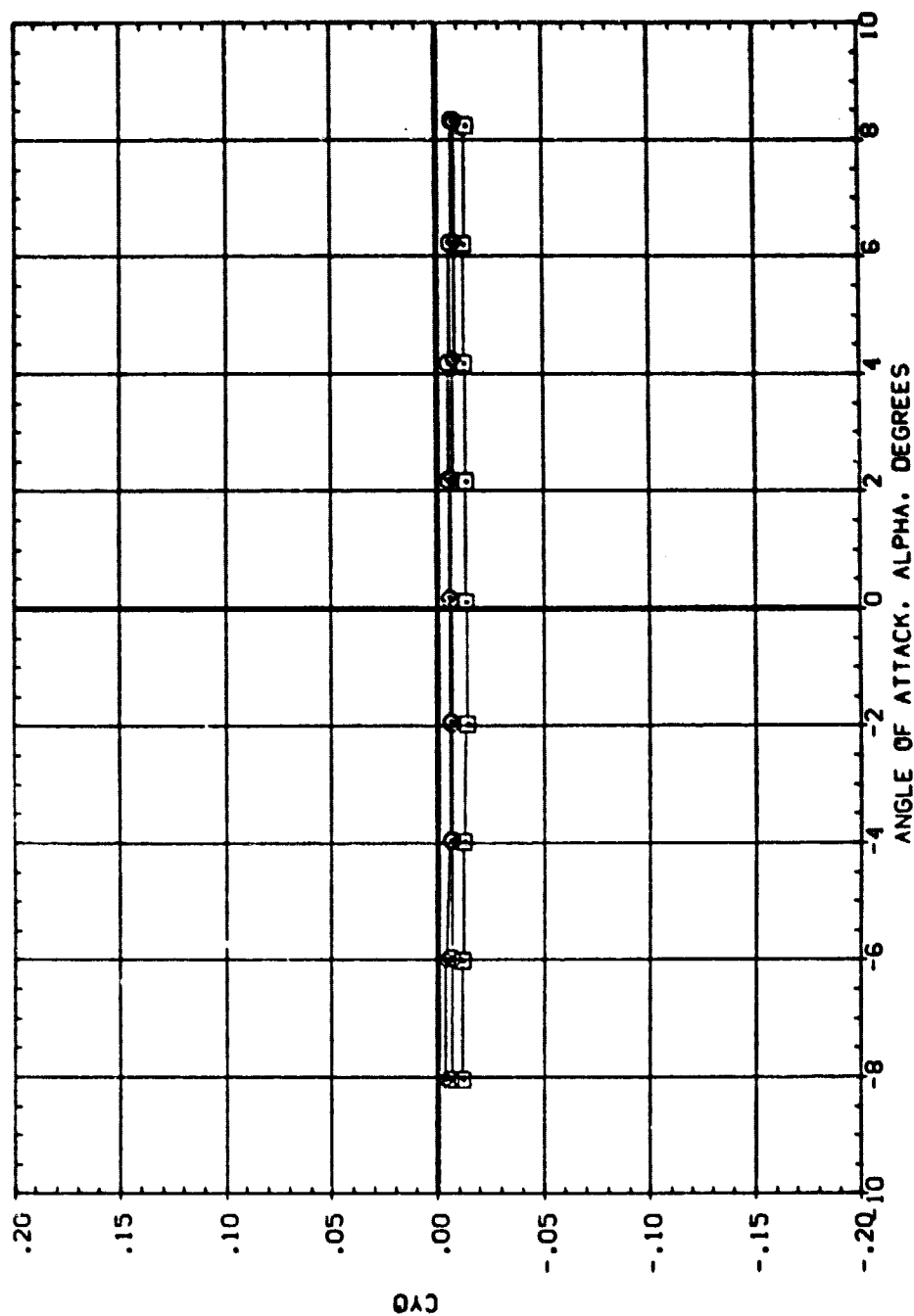
(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FA2808)	FA28. MSFC TVT 656. CONFIG.	QVZE2808A11253
(FA2810)	FA28. MSFC TVT 656. CONFIG.	QVZE2808A11253
(FA2813)	FA28. MSFC TVT 656. CONFIG.	QVZE2808A11253


REFERENCE INFORMATION

SREF	6.1980	IN.
LREF	5.1612	IN.
BREF	3.7470	IN.
XPBP	2.7120	IN.
YBP	.0000	IN.
ZBP	.0000	IN.
SCALE	.4000	PERCENT

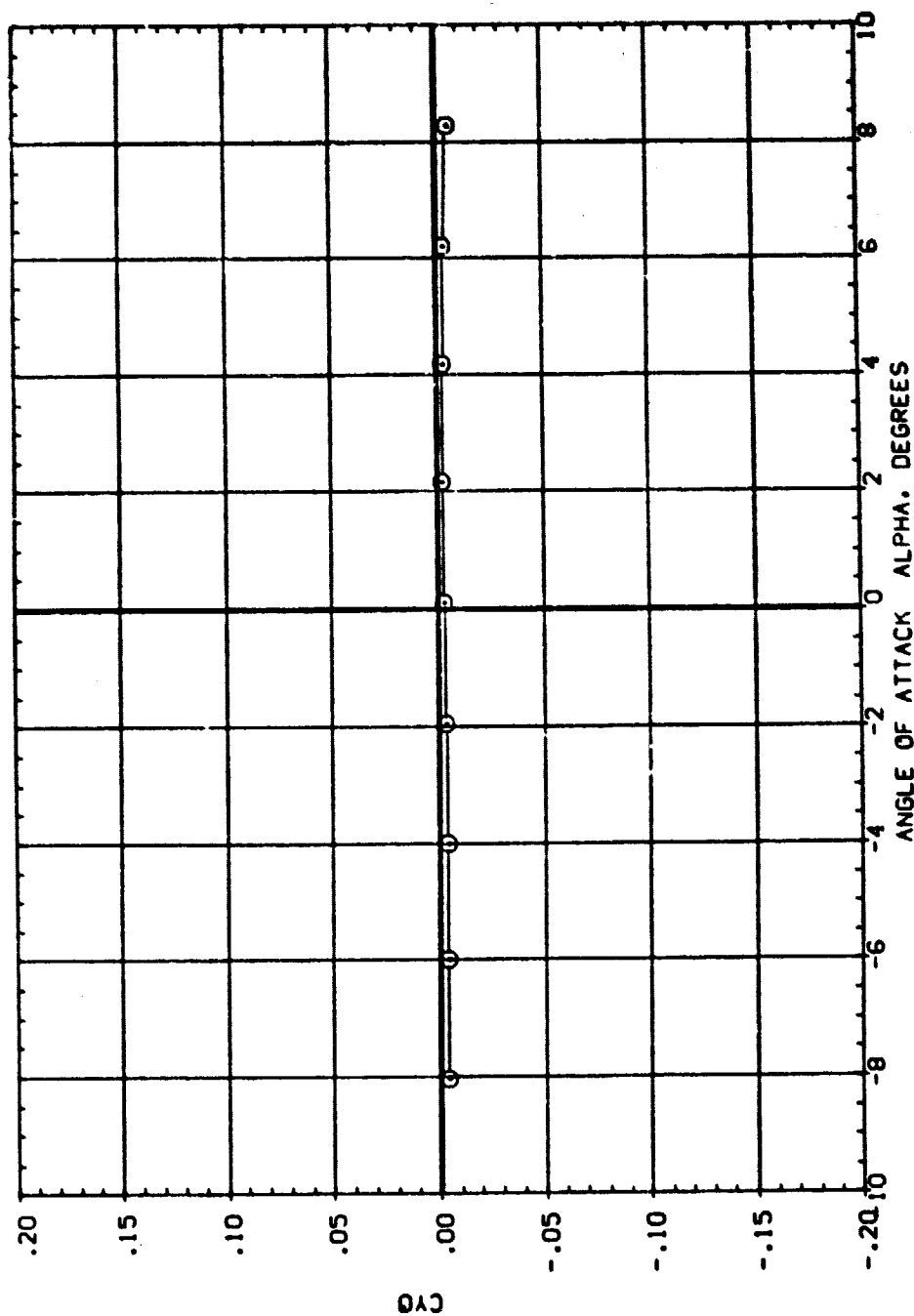


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION: FA28, MSFC, TWT, 656, CONFIG. 02N-2200A11T353
 (FA2808) DATA NOT AVAILABLE
 (FA2810) DATA NOT AVAILABLE
 (FA2813) DATA NOT AVAILABLE

REFERENCE INFORMATION:
 SREF: 6.1800 IN.
 LREF: 3.1612 IN.
 BREF: 2.1470 IN.
 RREF: 2.1120 IN.
 TREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT

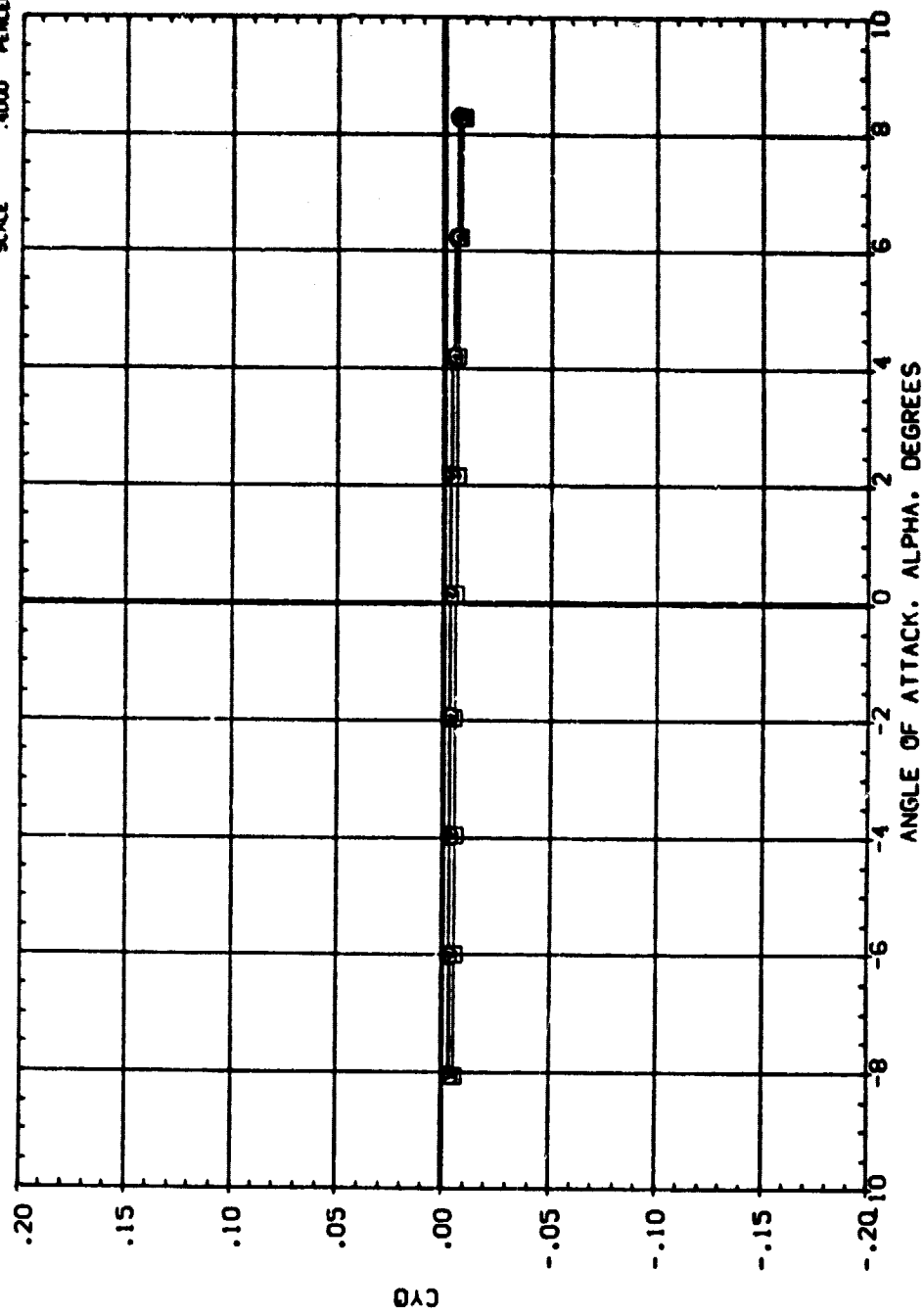


EFFECT OF BODY FLAP

(C)MACH = .95

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2808) (FA2810) (FA2813)
 (FA2808) (FA2810) (FA2813)
 (FA2808) (FA2810) (FA2813)
 (FA2808) (FA2810) (FA2813)

REFERENCE INFORMATION
 SREF 5.1580 IN
 LREF 5.1612 IN
 YREF 2.7470 IN
 YTRP 2.7120 IN
 ZTRP .0000 IN
 SCALE .4000 PERCENT

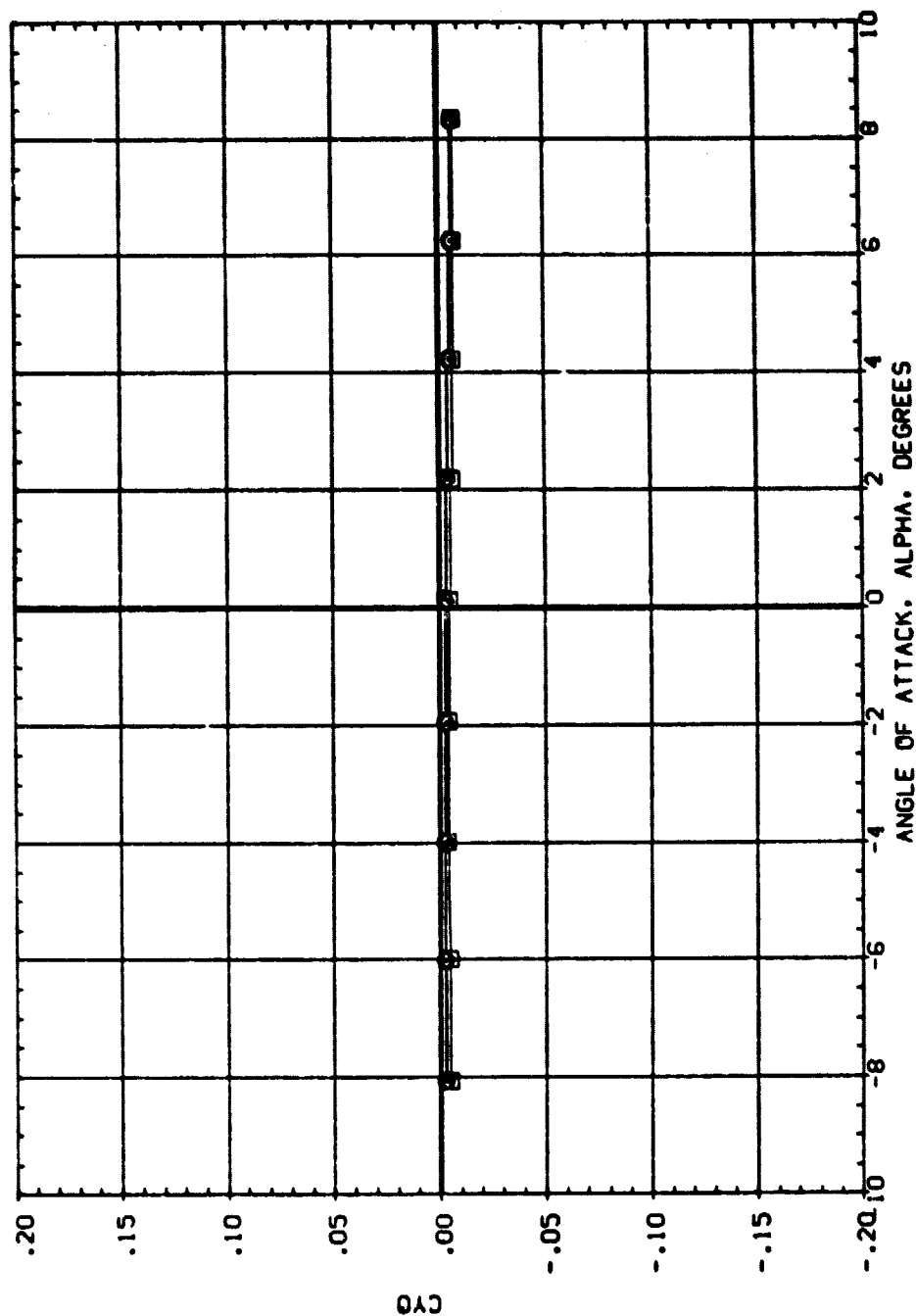


EFFECT OF BODY FLAP

(D)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION REFERENCE INFORMATION

(FA2808)	FA28. M5FC TUT 656. CONF IG. 02VZ22PAPAT1353	SREF	6.1580	IN.
(FA2810)	FA28. M5FC TUT 656. CONF IG. 02VZ22PAPAT1353	LREF	5.1612	IN.
(FA2813)	FA28. M5FC TUT 656. CONF IG. 02VZ22PAPAT1353	BREF	3.7470	IN.
		YREF	2.7120	IN.
		ZREF	.0000	IN.
		SCALE	.4000	PERCENT

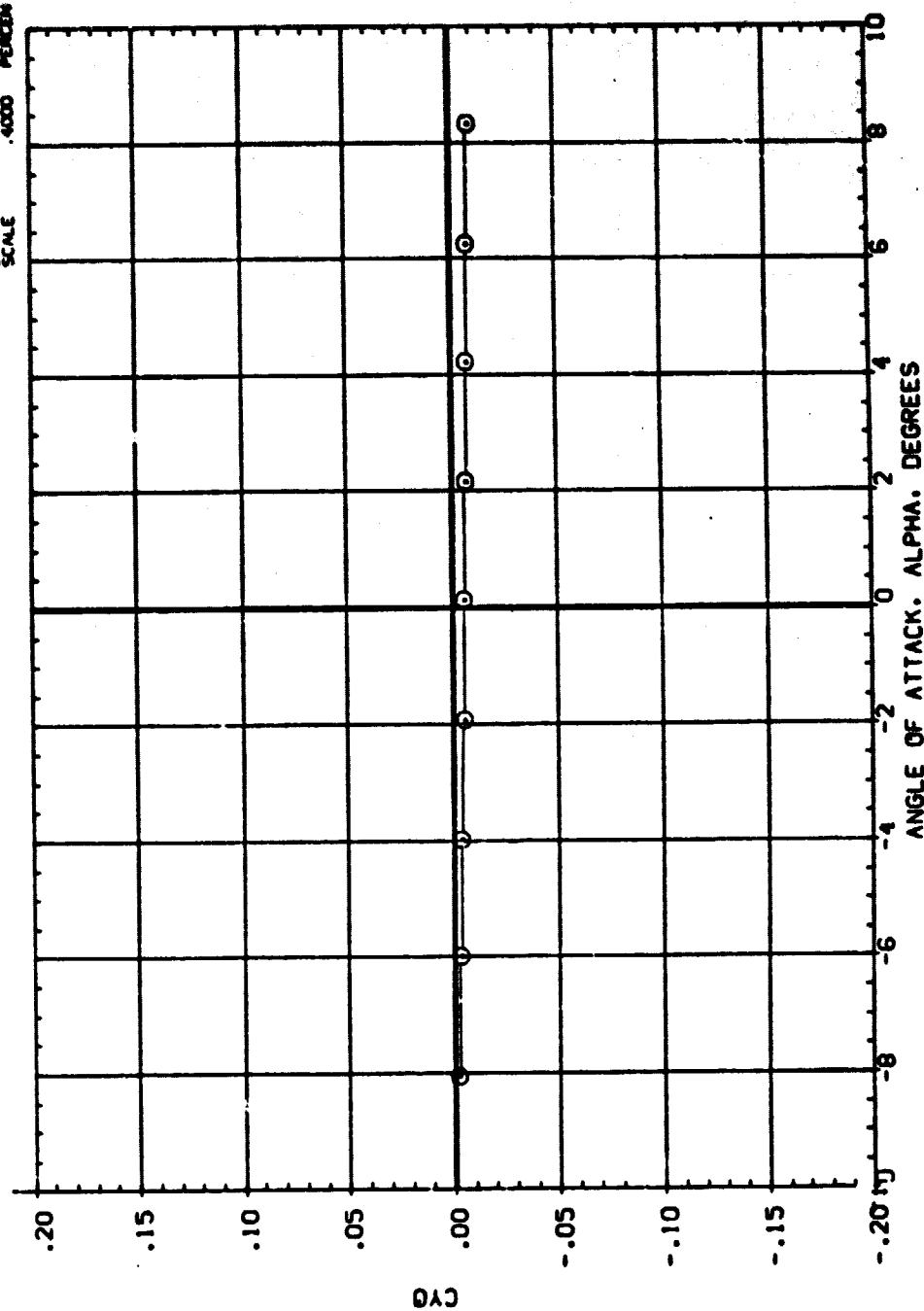


EFFECT OF BODY FLAP

(E)MACH = 1.10

DATA SET SYMBOL: **FA280** CONFIGURATION DESCRIPTION: **FA280, N97C TWT 636, CONF 16, 020222PMA17353**
 (FA280) DATA NOT AVAILABLE
 (FA281) DATA NOT AVAILABLE
 (FA2813) DATA NOT AVAILABLE

REFERENCE INFORMATION:
 SREF: 6.1980 SQ. IN.
 LREF: 5.1612 IN.
 SREF: 3.7470 IN.
 TREF: 2.7120 IN.
 TREF: .0000 IN.
 TREF: .0000 IN.
 SCALE: .4000 PERCENT

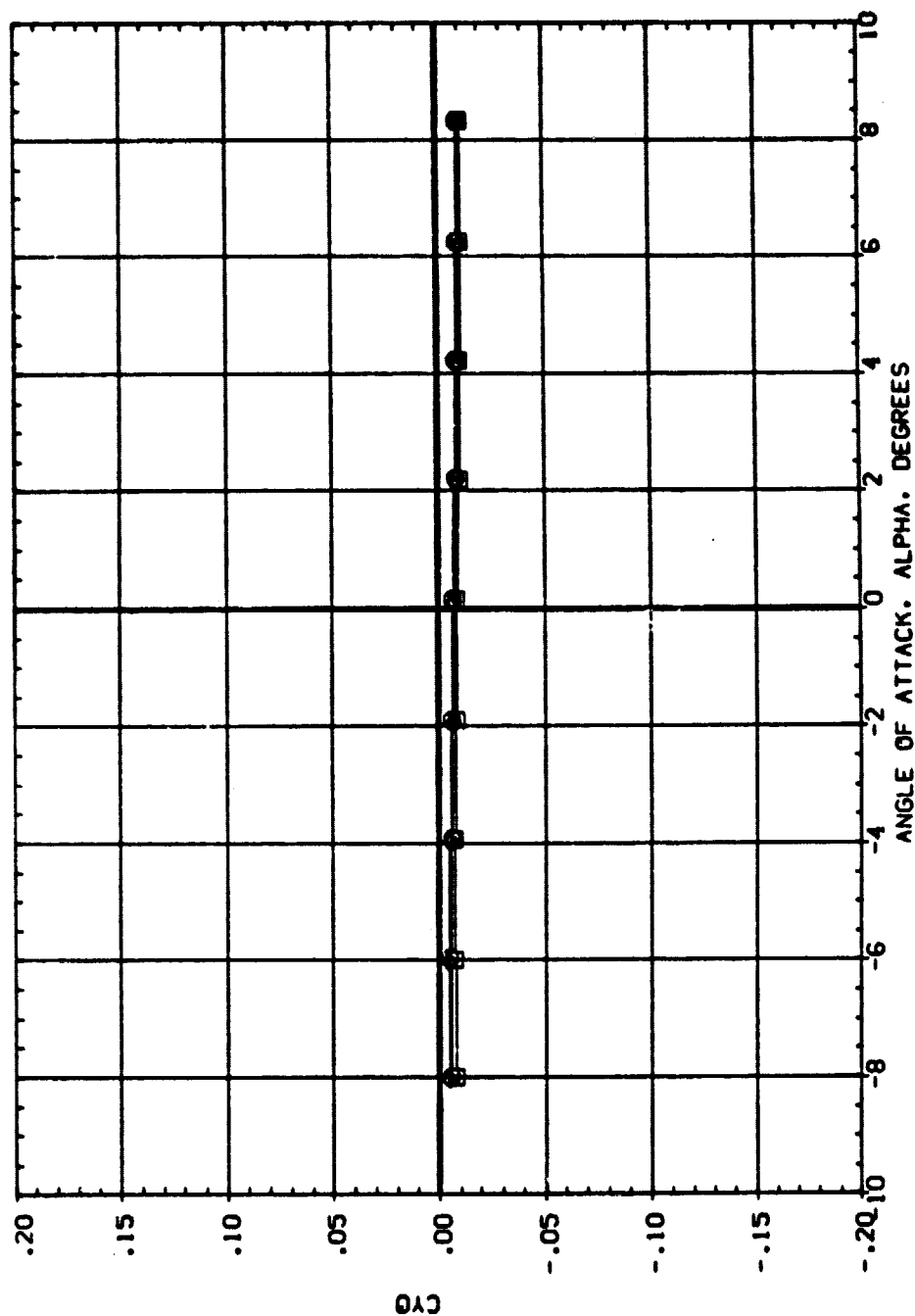


EFFECT OF BODY FLAP

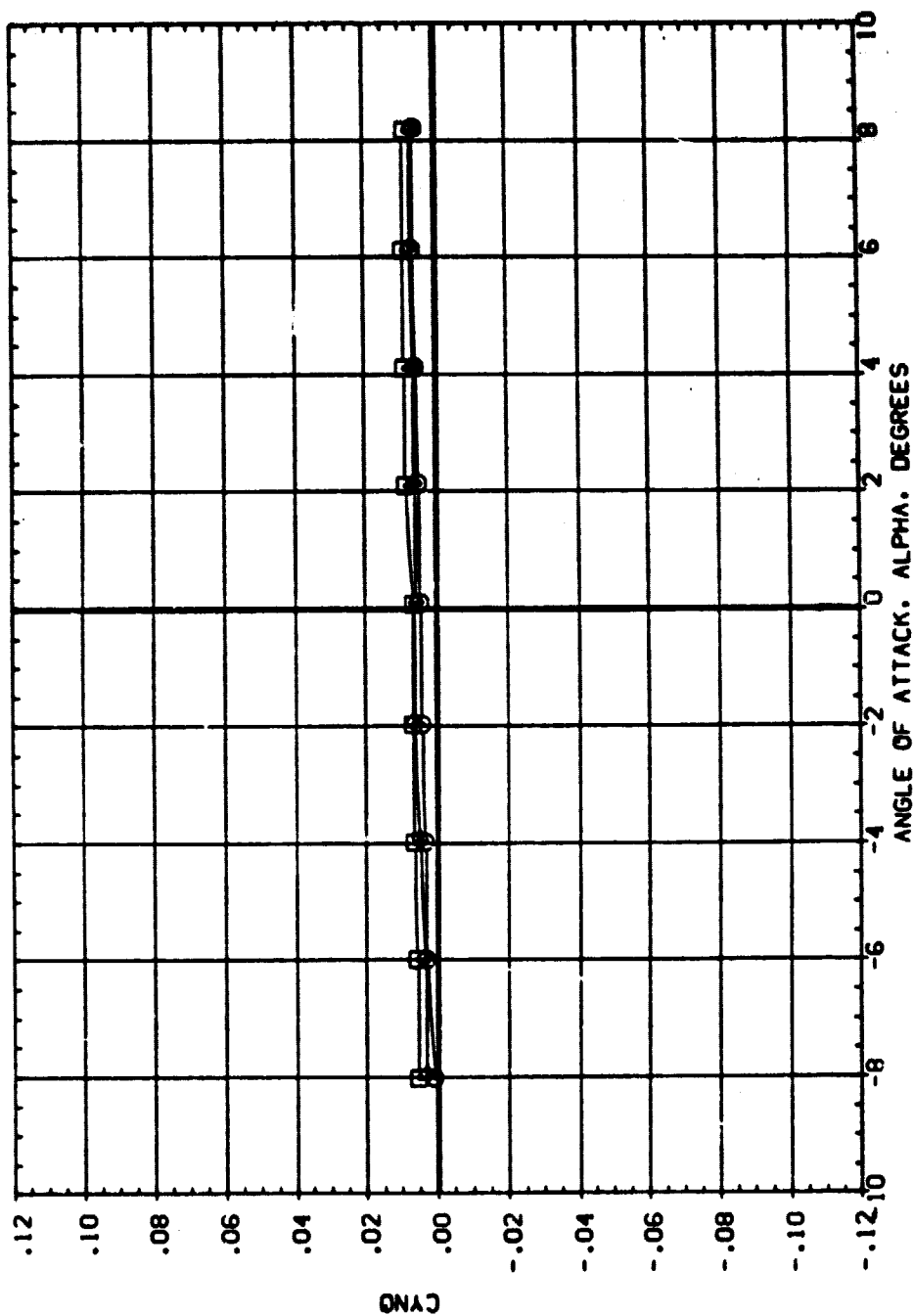
(F)MACH = 1.15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	QTY REQD
(F2808)	F28. M5C TWT 656. CONF IG.	QTY REQD PAAT1753
(F2810)	F28. M5C TWT 656. CONF IG.	QTY REQD PAAT1753
(F2813)	F28. M5C TWT 656. CONF IG.	QTY REQD PAAT1753

SCALE	.0000	PERIOD
2000	.0000	IN.
1000	.0000	IN.
500	.0000	IN.
250	.0000	IN.
125	.0000	IN.
62.5	.0000	IN.
31.25	.0000	IN.
15.625	.0000	IN.
7.8125	.0000	IN.
3.90625	.0000	IN.
1.953125	.0000	IN.
0.9765625	.0000	IN.
0.48828125	.0000	IN.
0.244140625	.0000	IN.
0.1220703125	.0000	IN.
0.06103515625	.0000	IN.
0.030517578125	.0000	IN.
0.0152587890625	.0000	IN.
0.00762939453125	.0000	IN.
0.003814697265625	.0000	IN.
0.0019073486328125	.0000	IN.
0.00095367431640625	.0000	IN.
0.000476837158203125	.0000	IN.
0.0002384185791015625	.0000	IN.
0.00011920928955078125	.0000	IN.
0.000059604644775390625	.0000	IN.
0.0000298023223876953125	.0000	IN.
0.00001490116119384765625	.0000	IN.
0.000007450580596923828125	.0000	IN.
0.0000037252902984619140625	.0000	IN.
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0.0000000582076609134674072265625	.0000	IN.
0.00000002910383045673370361328125	.0000	IN.
0.000000014551915228366851806640625	.0000	IN.
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0.00000000000011102230246251562787611316680908203125	.0000	IN.
0.000000000000055511151231257813938056583404541015625	.0000	IN.
0.0000000000000277555756156289069690282917022705078125	.0000	IN.
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0.000000000000000108420217248550417847766801449480676328125	.0000	IN.
0.0000000000000000542101086242752089238834007224723381640625	.0000	IN.
0.00000000000000002710505431213760446194170036123616908203		



REFERENCE INFORMATION	
SREF	6.1980
LREF	5.1612
BREF	3.7470
XPREF	2.7120
YREF	.0000
ZREF	.0000
SCALE	.0000



EFFECT OF BODY FLAP

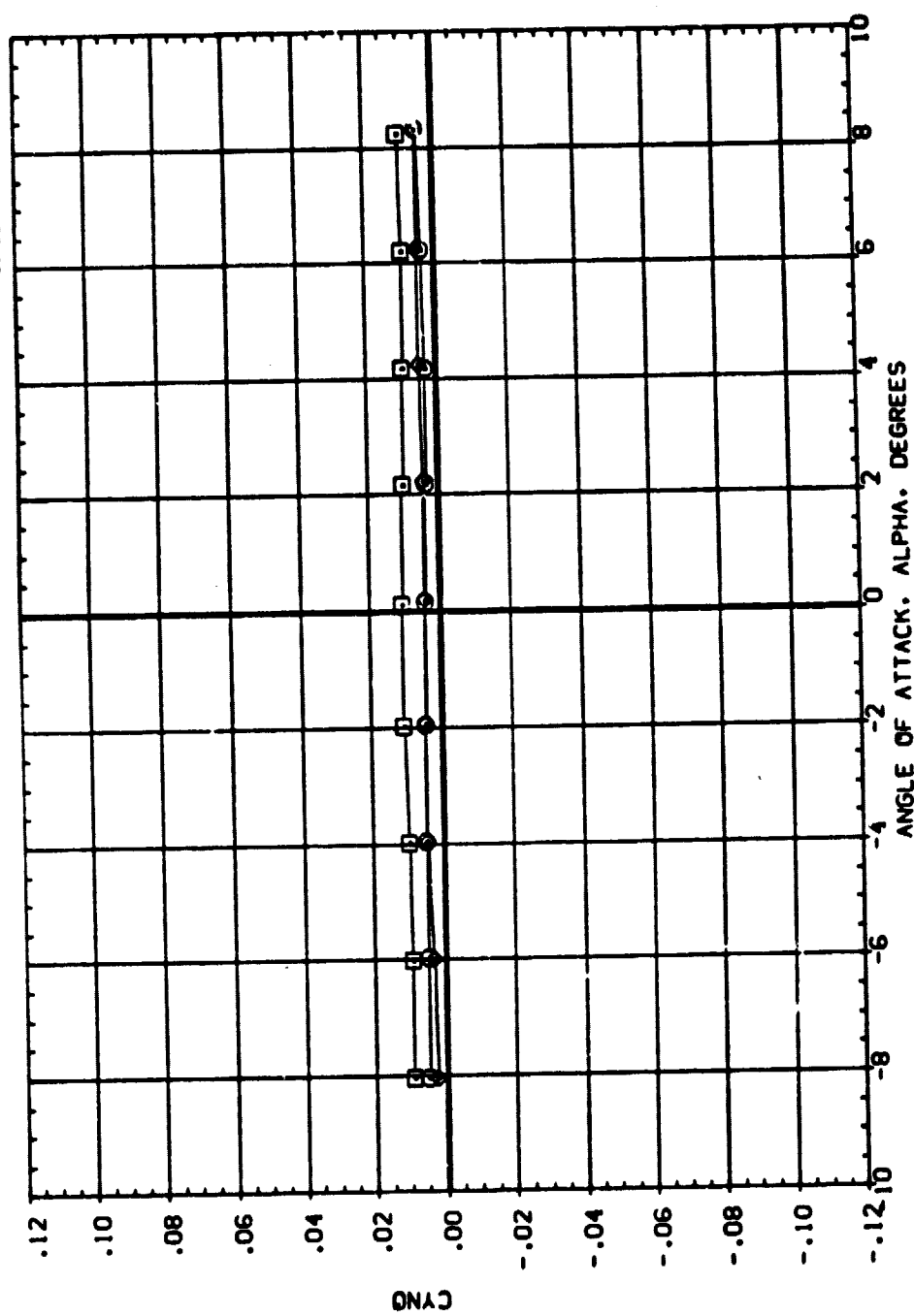
(A)MACH = .60

DATA SET SYMBO. CONFIGURATION DESCRIPTION

(FA281) 8 Q2N2E2M6AATTJ53
 (FA2810) FA28. M5TC TWT 656. CONF 16. Q2N2E2M6AATTJ53
 (FA2813) FA28. M5TC TWT 656. CONF 16. Q2N2E2M6AATTJ53

REFERENCE INFORMATION

SREF 6.1580 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 MREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

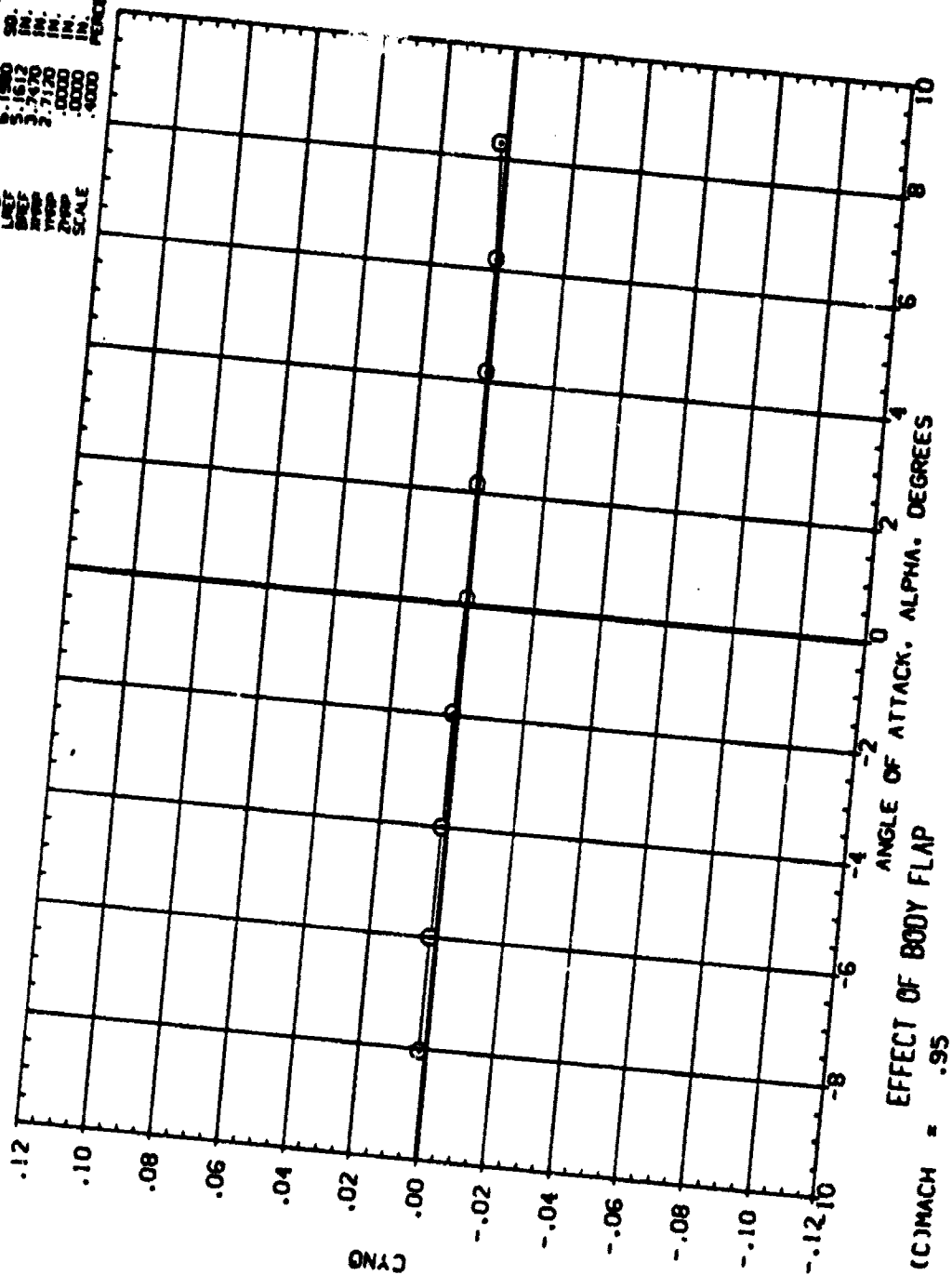


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28, MSFC, TWT 826, CONFIG. 00023000AATT363
 DATA NOT AVAILABLE
 DATA NOT AVAILABLE

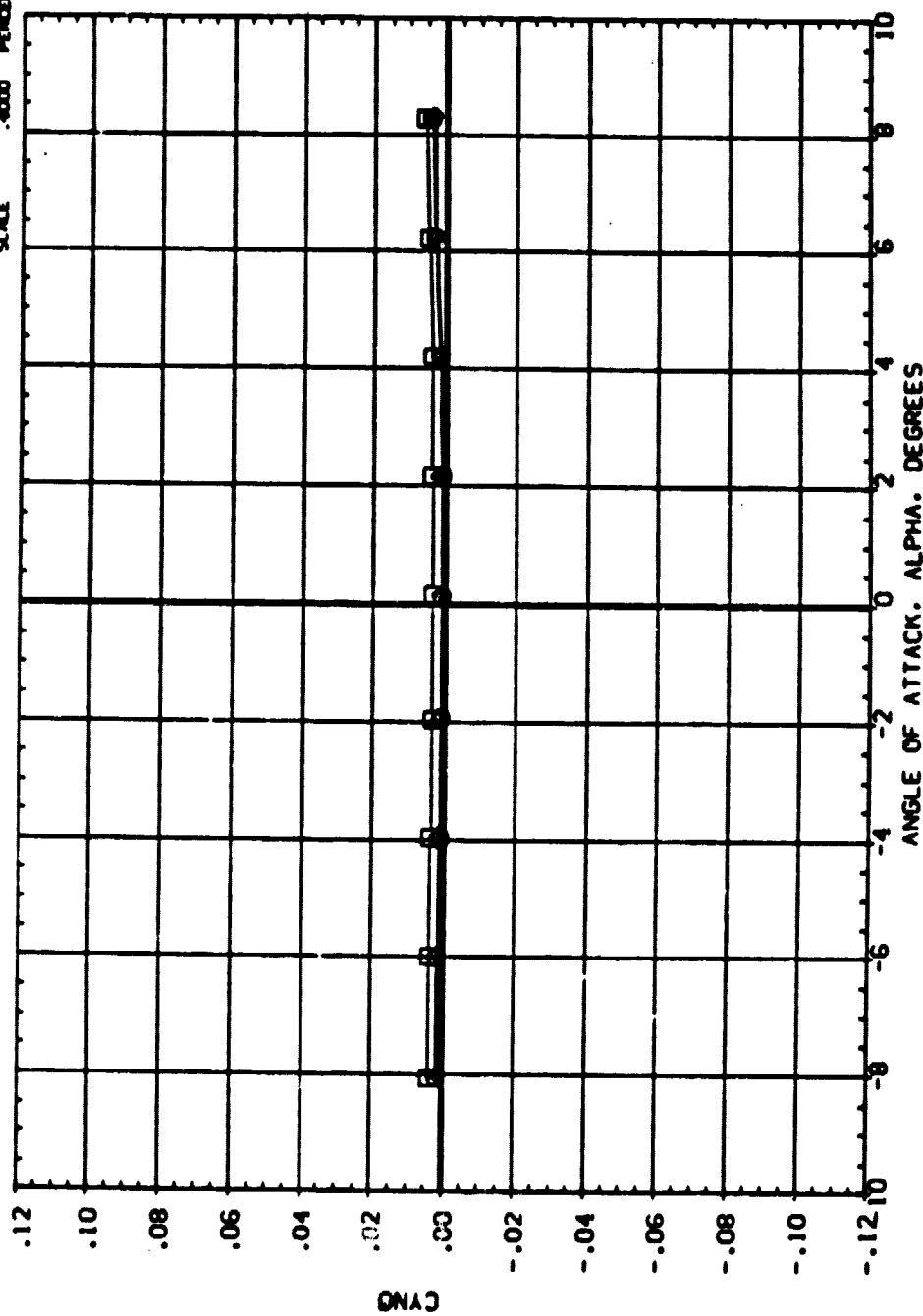
REFERENCE INFORMATION
 SHEET 8-1580 50. IN.
 LIFT 2.1612 IN.
 SPIN 2.1670 IN.
 YAW 2.1720 IN.
 ZAW 2.1720 IN.
 SCALE .0000 IN.
 PEAKON



EFFECT OF BODY FLAP
 (C)MACH = .95

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FAS200) 8 FAS200 101 656. CONF IG. ORVZ 200A117353
 (FAS210) 8 FAS210 101 656. CONF IG. ORVZ 200A117353
 (FAS213) 8 FAS213 101 656. CONF IG. ORVZ 200A117353

REFERENCE INFORMATION
 SREF 6.1280 SO. IN
 LREF 5.1612 IN.
 MREF 3.7470 IN.
 WREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

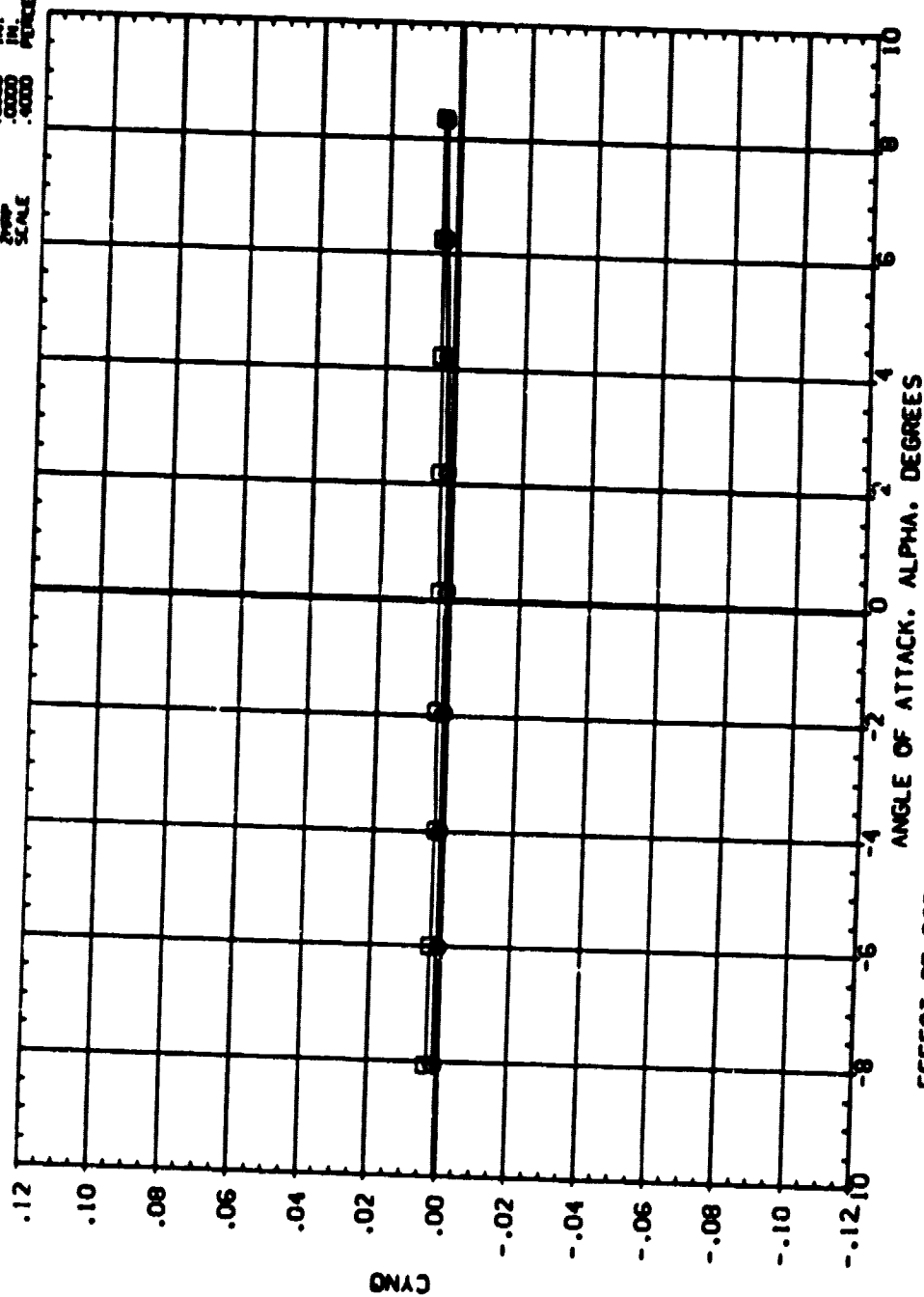


EFFECT OF BODY FLAP

(D)MACH = 1.05

DATA SET SYMBOL	CONFIRMATION	DESCRIPTION
(F4208)	F4208	TEST TVT 635- CONF 16.
(F42010)	F42010	TEST TVT 635- CONF 16.
(F42012)	F42012	TEST TVT 635- CONF 16.

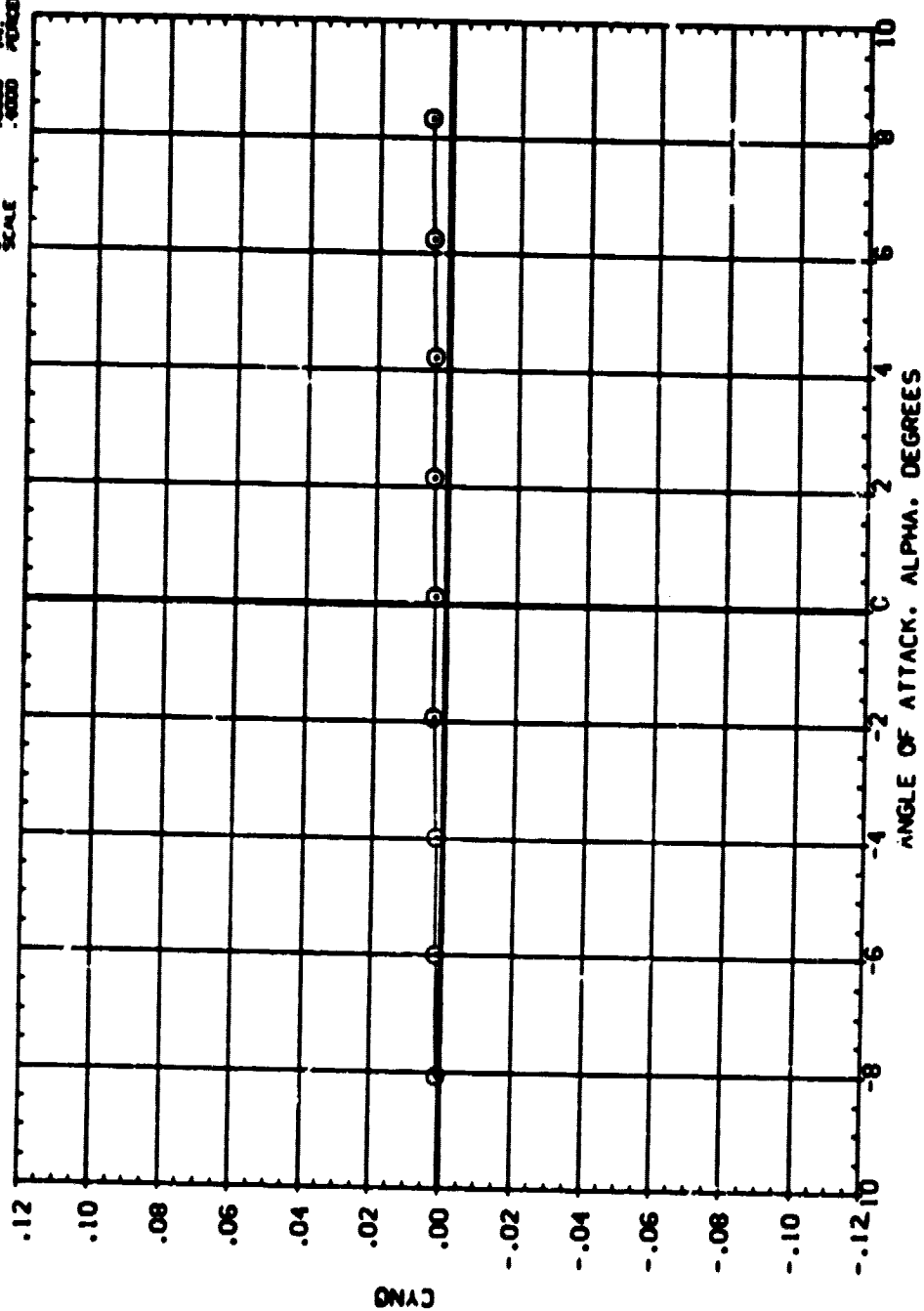
AVERAGE INFORMATION	
SPR	3.150 IN.
UNIT	5.612 IN.
SPR	2.970 IN.
SPR	2.710 IN.
WSP	.0000 IN.
WSP	.0000 IN.
SCALE	.0000 PITCH



EFFECT OF BODY FLAP

(E)MACH = 1.10

STRT	END	RECEIVE IDENTIFICATION IN
LAST	9-1612	IN
DATE	3-7-70	IN
TIME	2-21Z	IN
WIND	-0000	IN
TEMP	-0000	IN
SCALE	-0000	PERCENT

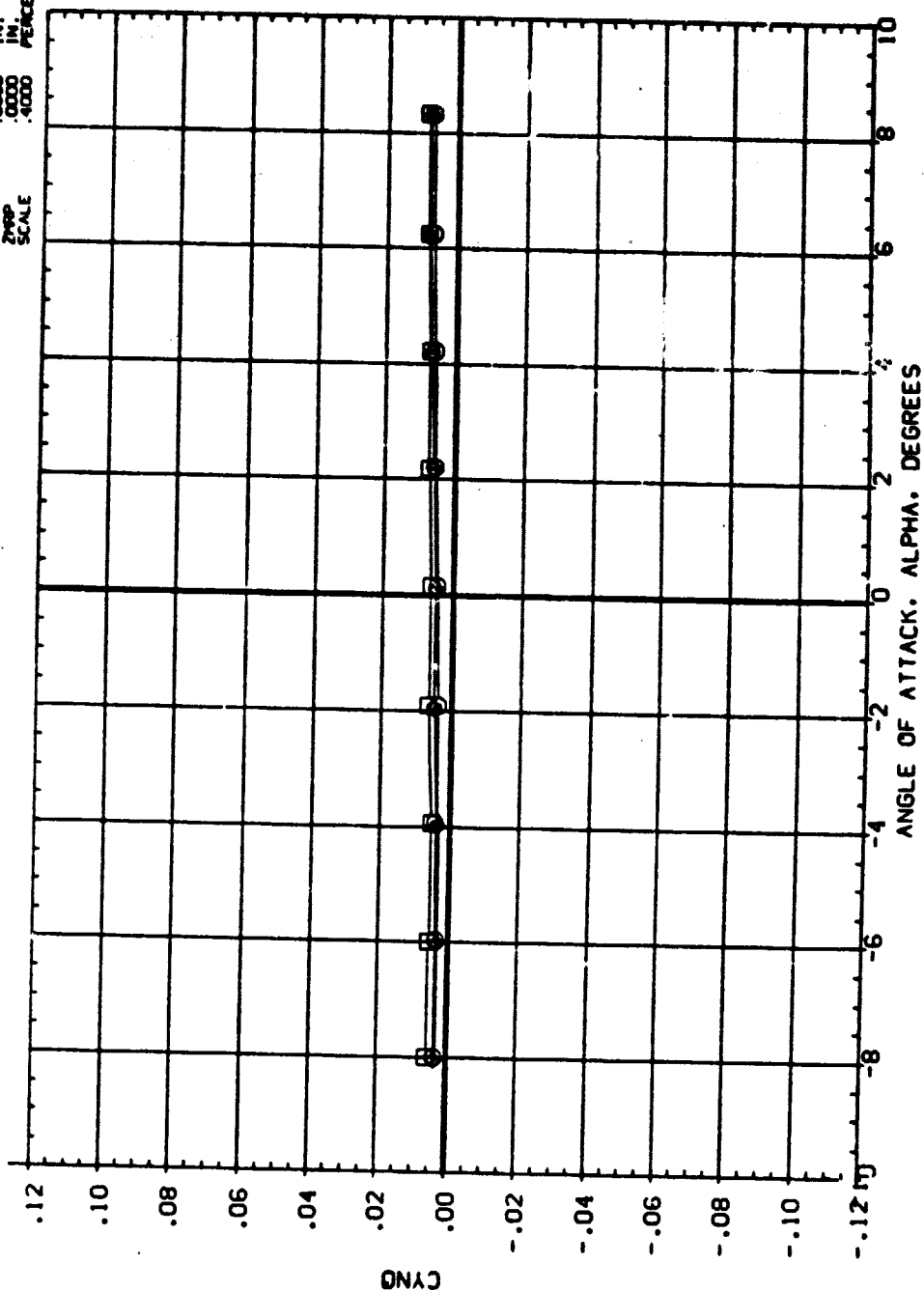


EFFECT OF BODY FLAP

(F)MACH = 1.15

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA281) (FA281) MSFC TVT 656: CONF IG. 03NZE20APAT1153
 (FA2810) (FA2810) MSFC TVT 656: CONF IG. 03NZE20APAT1153
 (FA2813) (FA2813) MSFC TVT 656: CONF IG. 03NZE20APAT1153

REFERENCE INFORMATION
 SREF 6.1880 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

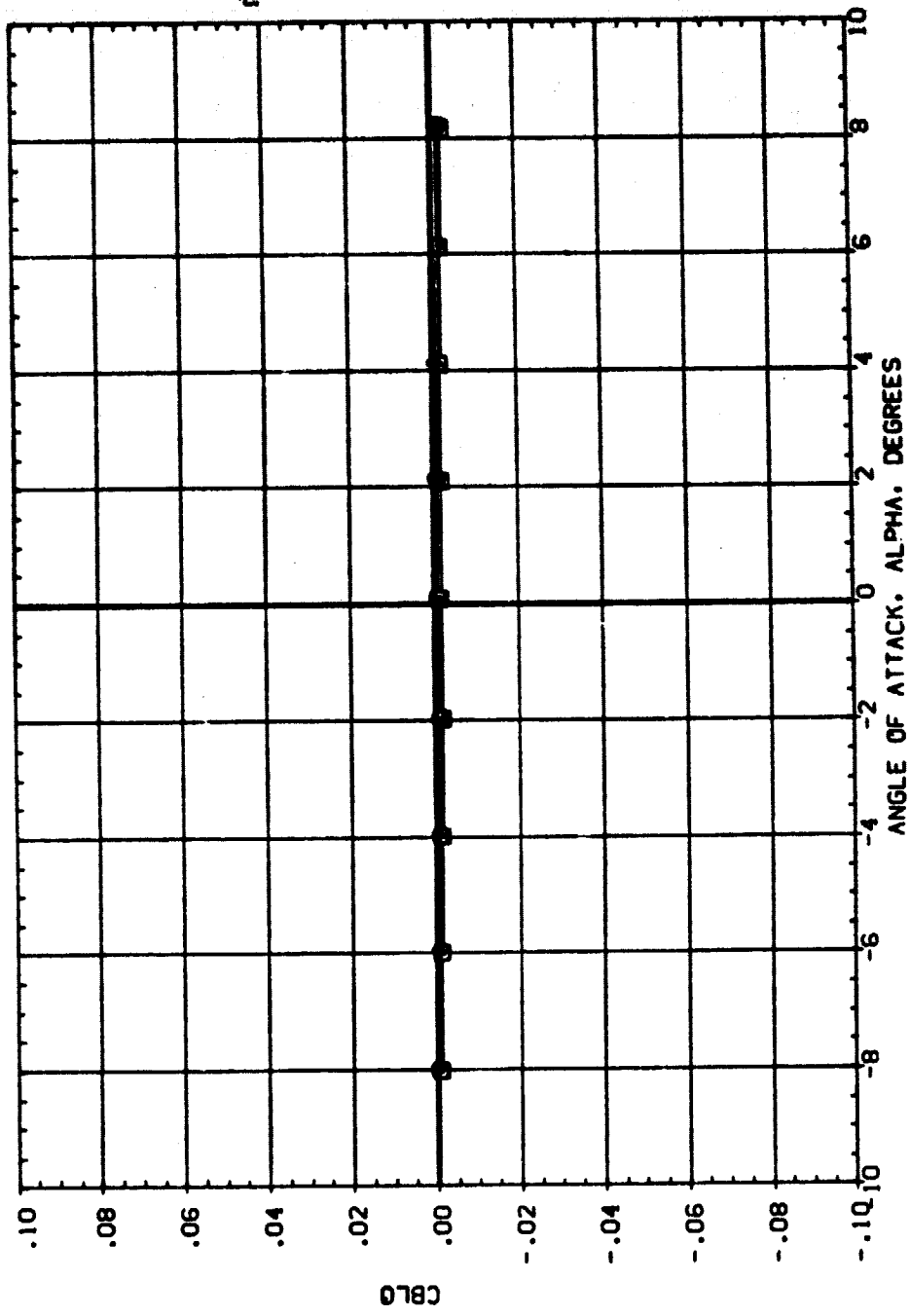


EFFECT OF BODY FLAP

(G)MACH = 1.25

DATA SET SYMBOL: 88
 CONFIGURATION DESCRIPTION:
 (FA281) FA28: MSFC INT 555: CONF IG: 0N1Z2RPAATT1353
 (FA2810) FA28: MSFC INT 555: CONF IG: 0N1Z2RPAATT1353
 (FA2813) FA28: MSFC INT 555: CONF IG: 0N1Z2RPAATT1353

REFERENCE INFORMATION:
 SREF: 6.1980 IN.
 LREF: 5.1612 IN.
 SREF: 2.7476 IN.
 SREF: 2.7120 IN.
 TREF: .0000 IN.
 TREF: .0000 IN.
 SCALE: .4000 PERCENT

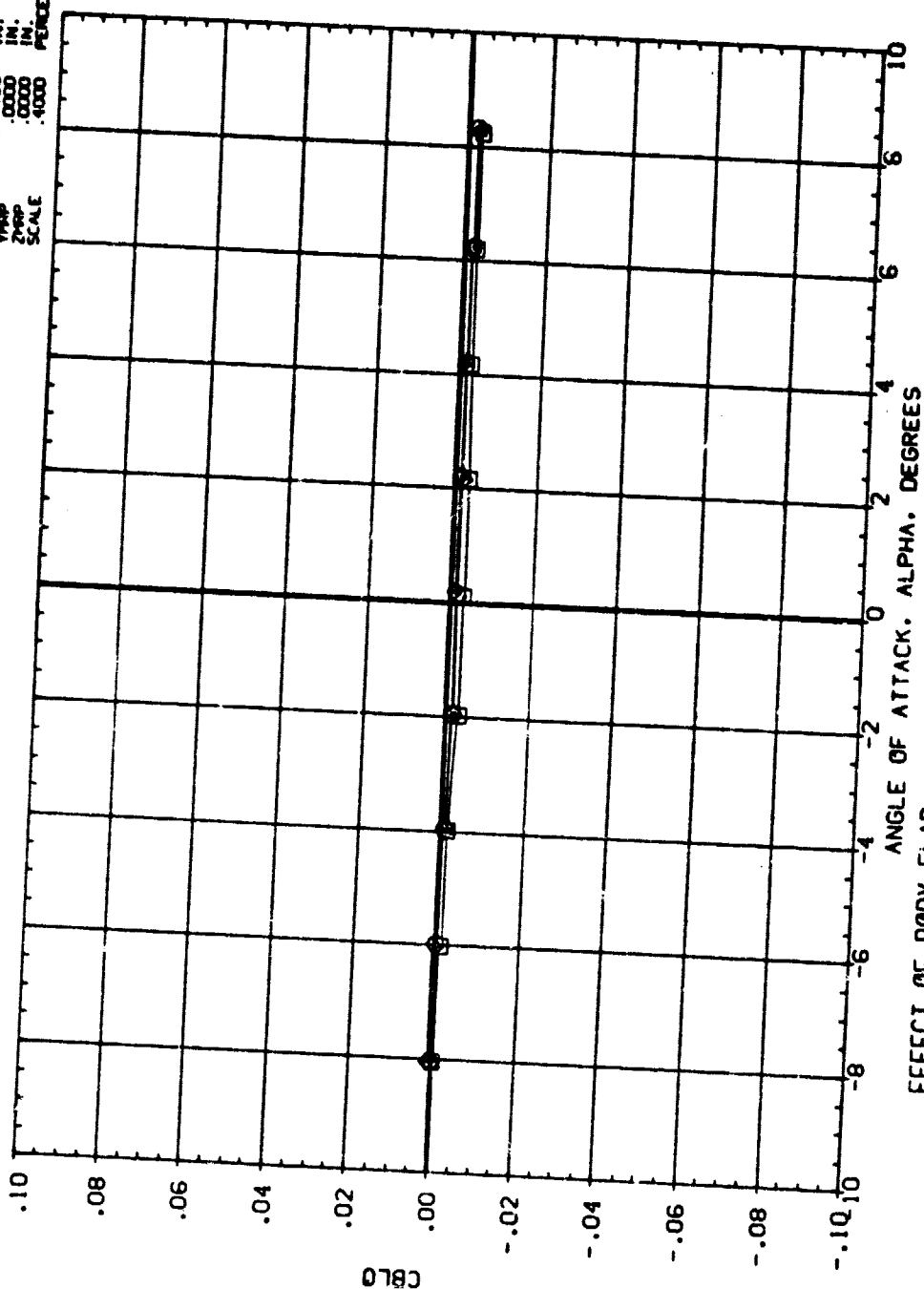


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2808) FA28. MSFC TVT 656. CONF 16. 02VZ28PAAT1253
 (FA2810) FA28. MSFC TVT 656. CONF 16. 02VZ28PAAT1253
 (FA2813) FA28. MSFC TVT 656. CONF 16. 02VZ28PAAT1253

REFERENCE INFORMATION
 SREF 5.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 TREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

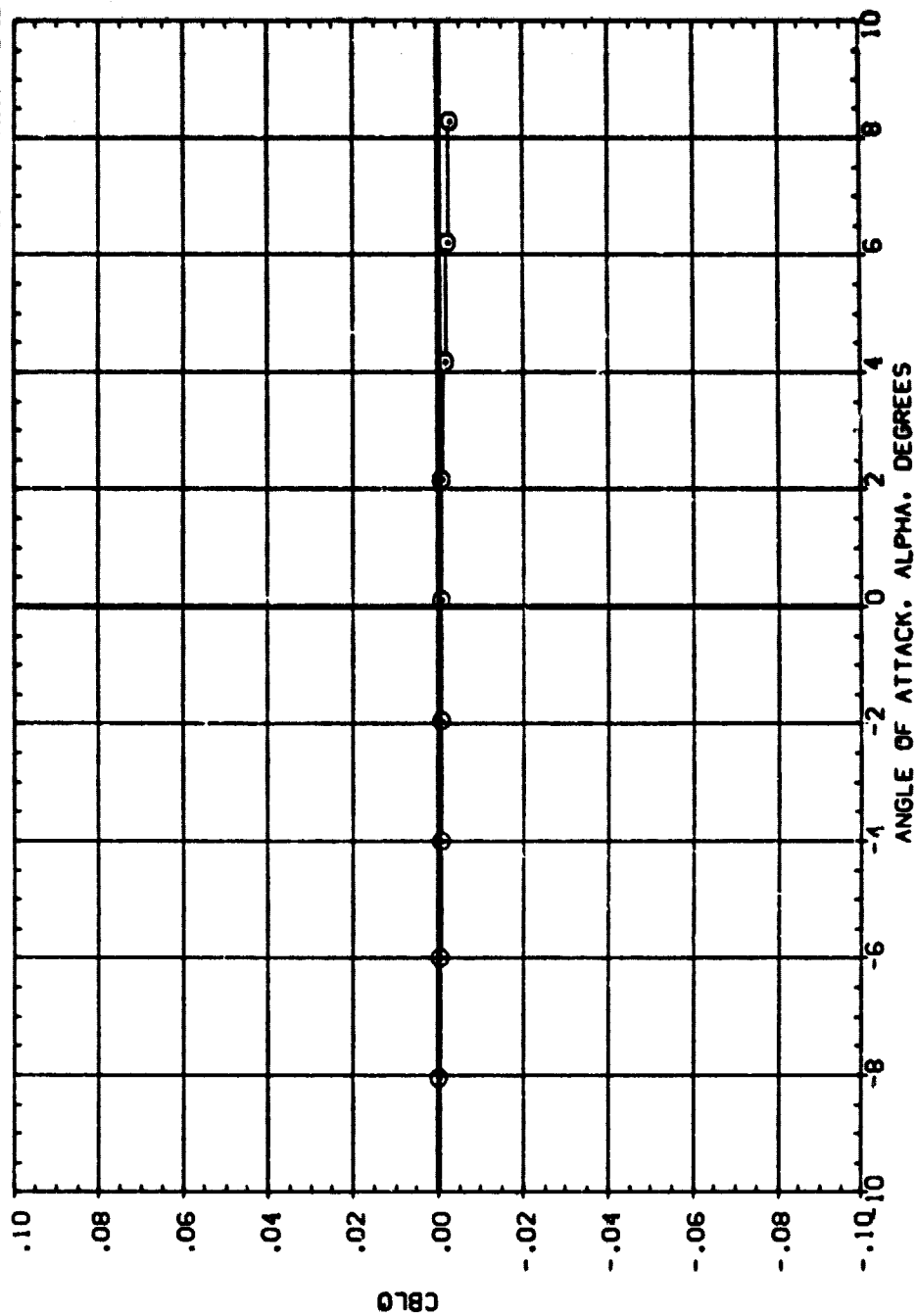


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2808) FA28. MSFC TVT 626. CONF 16. 02V2E3PMAATT3S3
 (FA2810) DATA NOT AVAILABLE
 (FA2813) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SPEC 6.1580 90. IN
 LREF 3.1612 IN.
 SPEC 2.7470 IN.
 SPEC 2.7120 IN.
 TREF .0000 IN.
 TREF .0000 IN.
 SCALE .0000 PERCENT

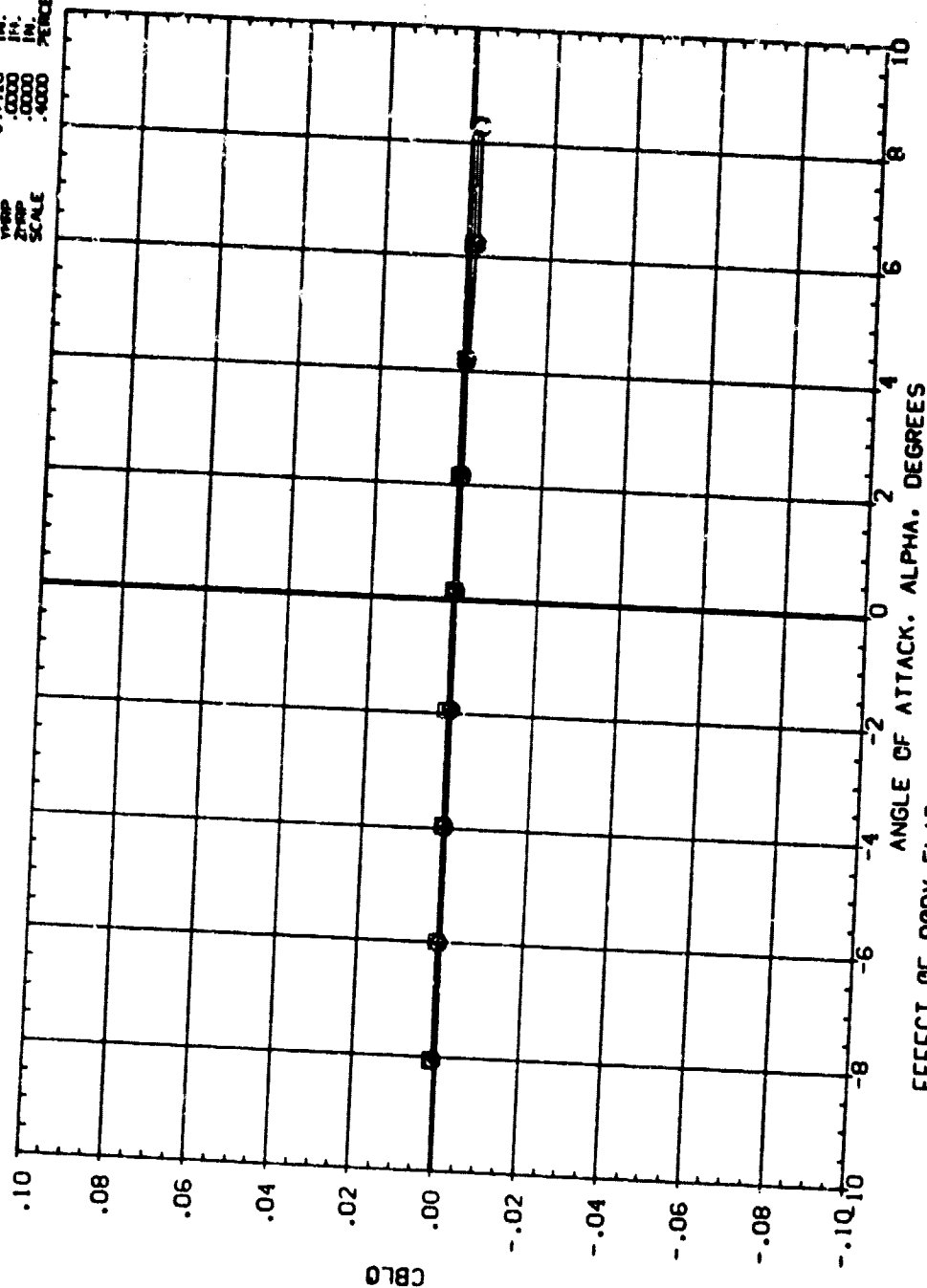


EFFECT OF BODY FLAP

(C)MACH = .95

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2808) FA28. MSC TVT 656. CONF IG. 02NZE20PAPAT1753
 (FA2810) FA28. MSC TVT 656. CONF IG. 02NZE20PAPAT1753
 (FA2813) FA28. MSC TVT 656. CONF IG. 02NZE20PAPAT1753

REFERENCE INFORMATION
 SREF 6.1280 90. IN
 LREF 5.1612 10. IN
 BREF 3.7470 10. IN
 WREF 2.7120 10. IN
 YREF .0000 10. IN
 ZREF .0000 10. IN
 SCALE .0000 PERIOD

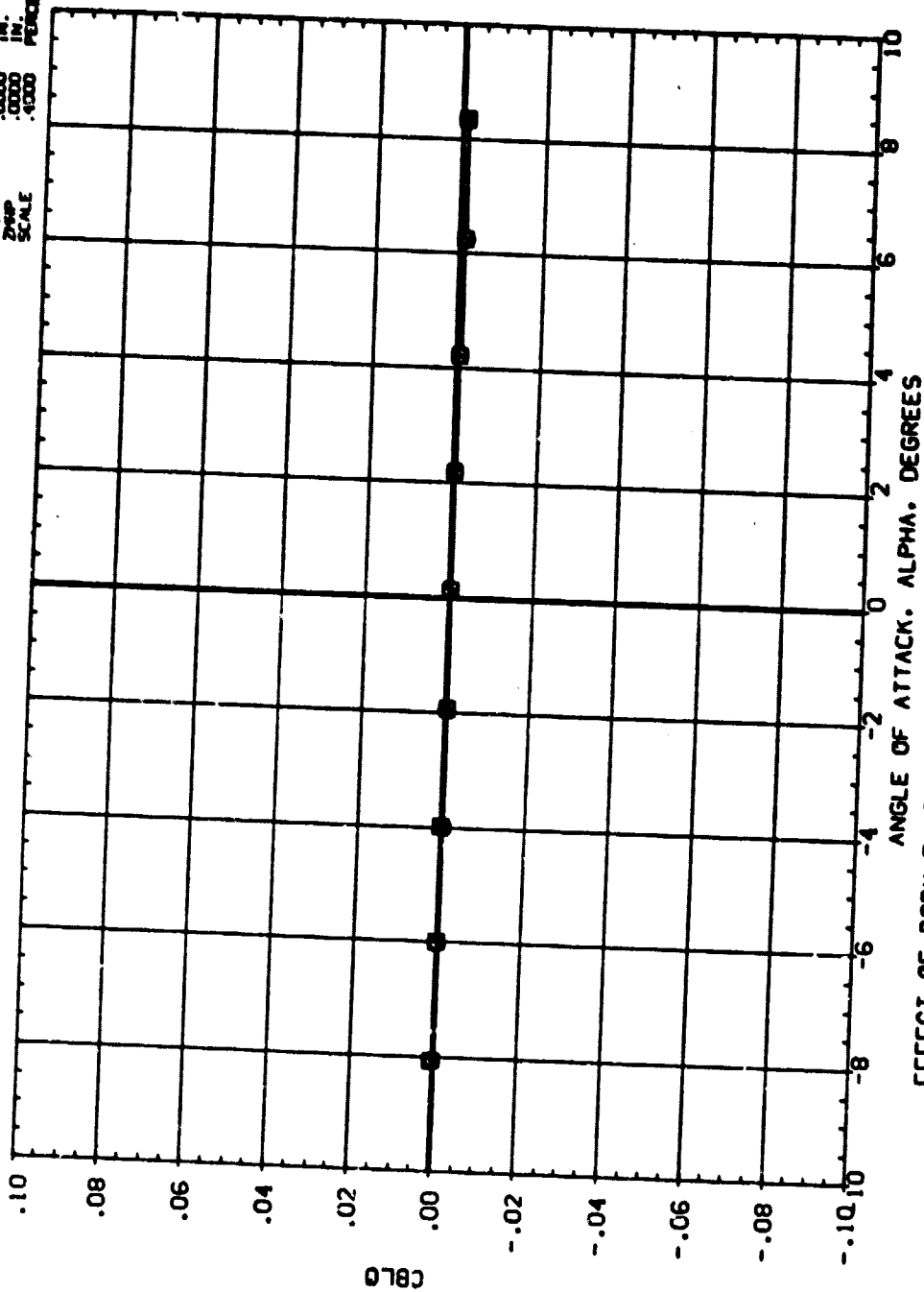


EFFECT OF BODY FLAP

(D)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2808) FA28. MSFC TUT 656. CONF 1G. 00VZ20PAAT123
 (FA2810) FA28. MSFC TUT 656. CONF 1G. 00VZ20PAAT123
 (FA2813) FA28. MSFC TUT 656. CONF 1G. 00VZ20PAAT123

REFERENCE INFORMATION
 SREF 6.1580 50. IN.
 LREF 5.1612 10. IN.
 WREF 3.7470 10. IN.
 TREF 2.7120 10. IN.
 ZREF .0000 10. IN.
 SCALE .4000 PERCENT

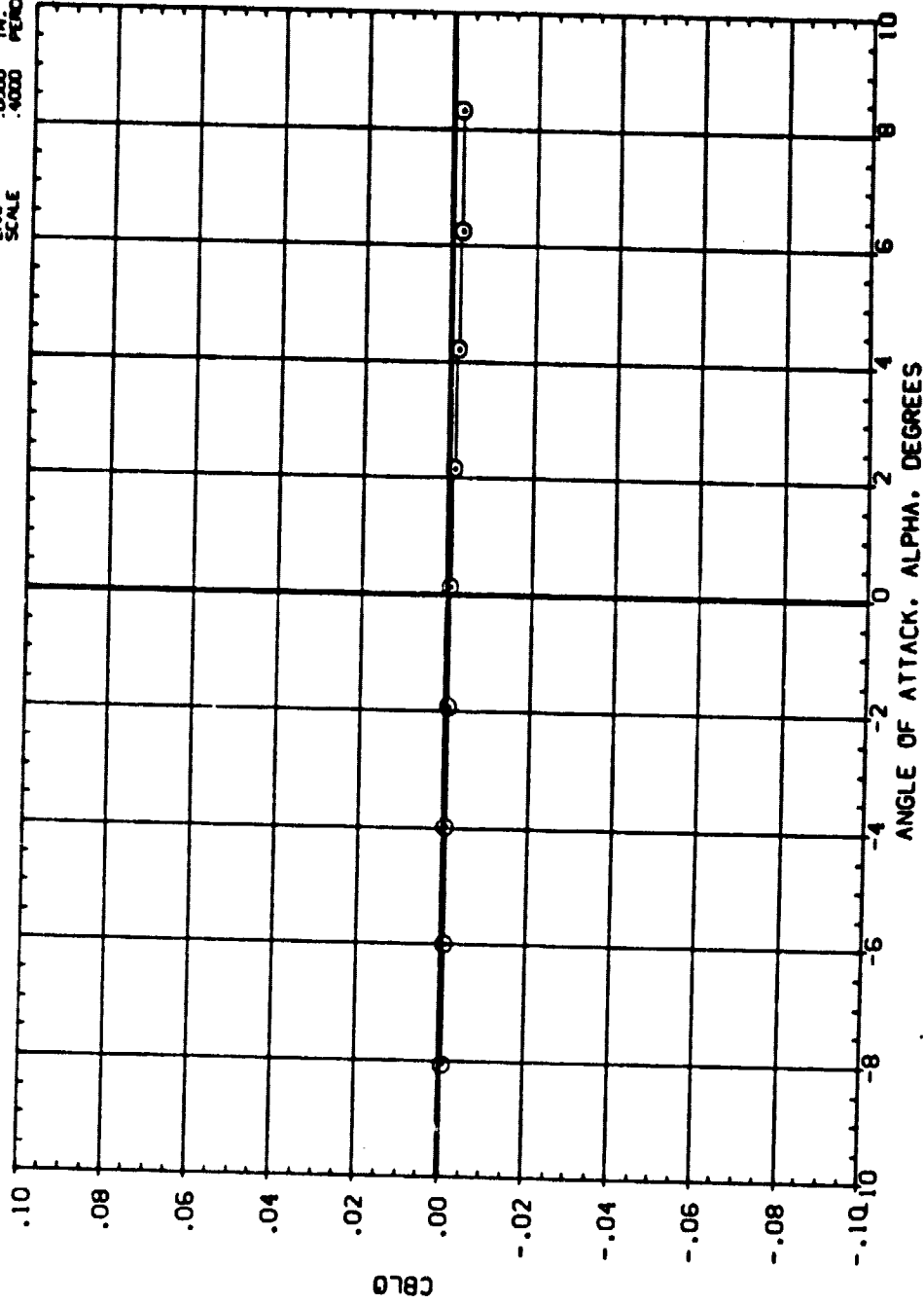


EFFECT OF BODY FLAP

(E)MACH = 1.10

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28, MSFC, TWT, 655, CONFIG. 00VZ2PMA1T353
 (FA2808) DATA NOT AVAILABLE
 (FA2810) DATA NOT AVAILABLE
 (FA2813)

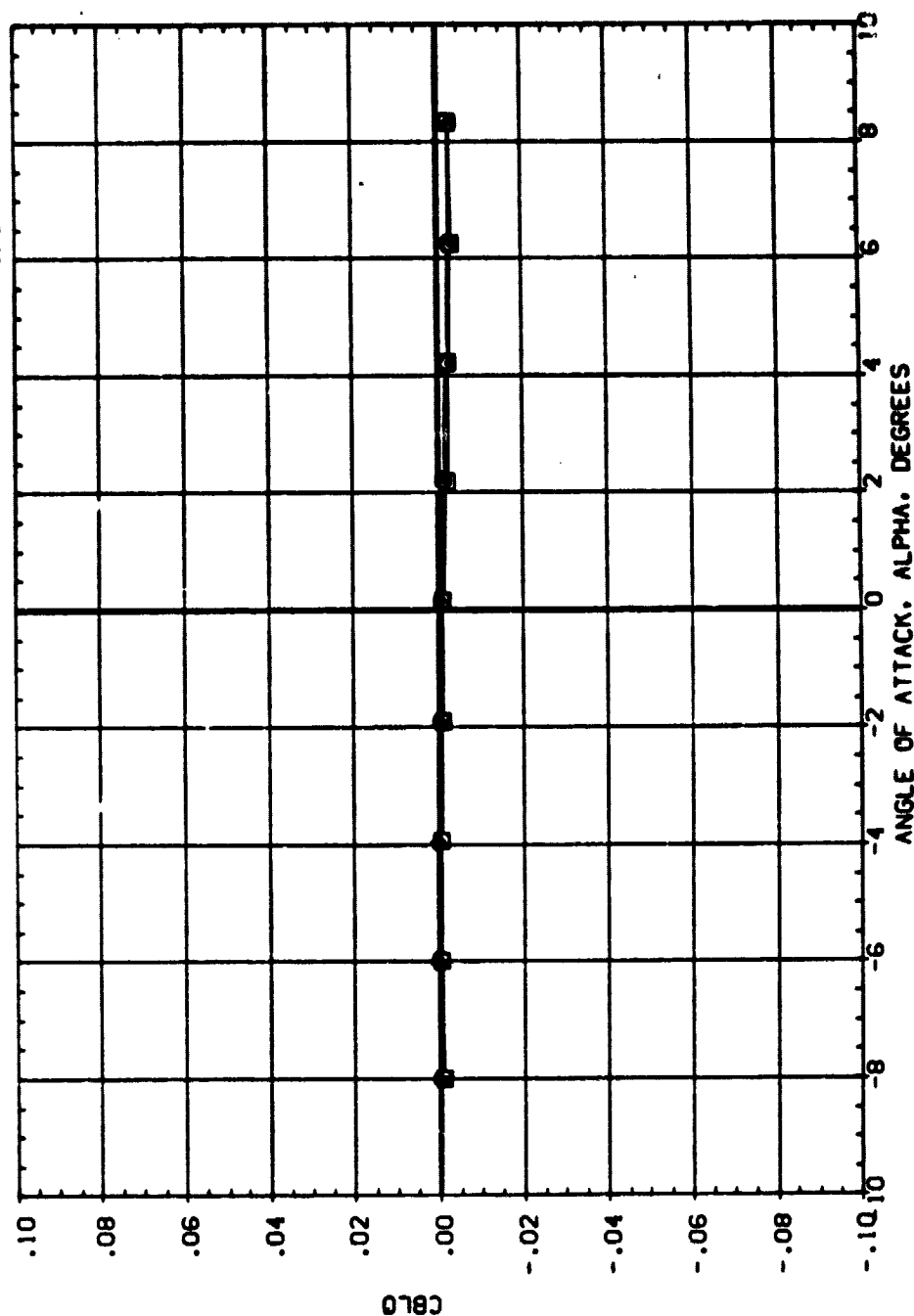
REFERENCE INFORMATION
 SREF 5.1580 IN.
 LREF 5.1512 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF BODY FLAP
 (F)MACH = 1.15

COF LOCATION	DESCRIPTION
FA28.	MSFC TWT 656. COF IG.
FA28.	MSFC TWT 656. COF IG.
FA28.	MSFC TWT 656. COF IG.

REF	6.180	SO. IN
LET	5.1612	IN.
BET	3.7470	IN.
1000	2.7120	IN.
1000	.0000	IN.
7000	.0070	IN.
SCALE	.0000	PERCH



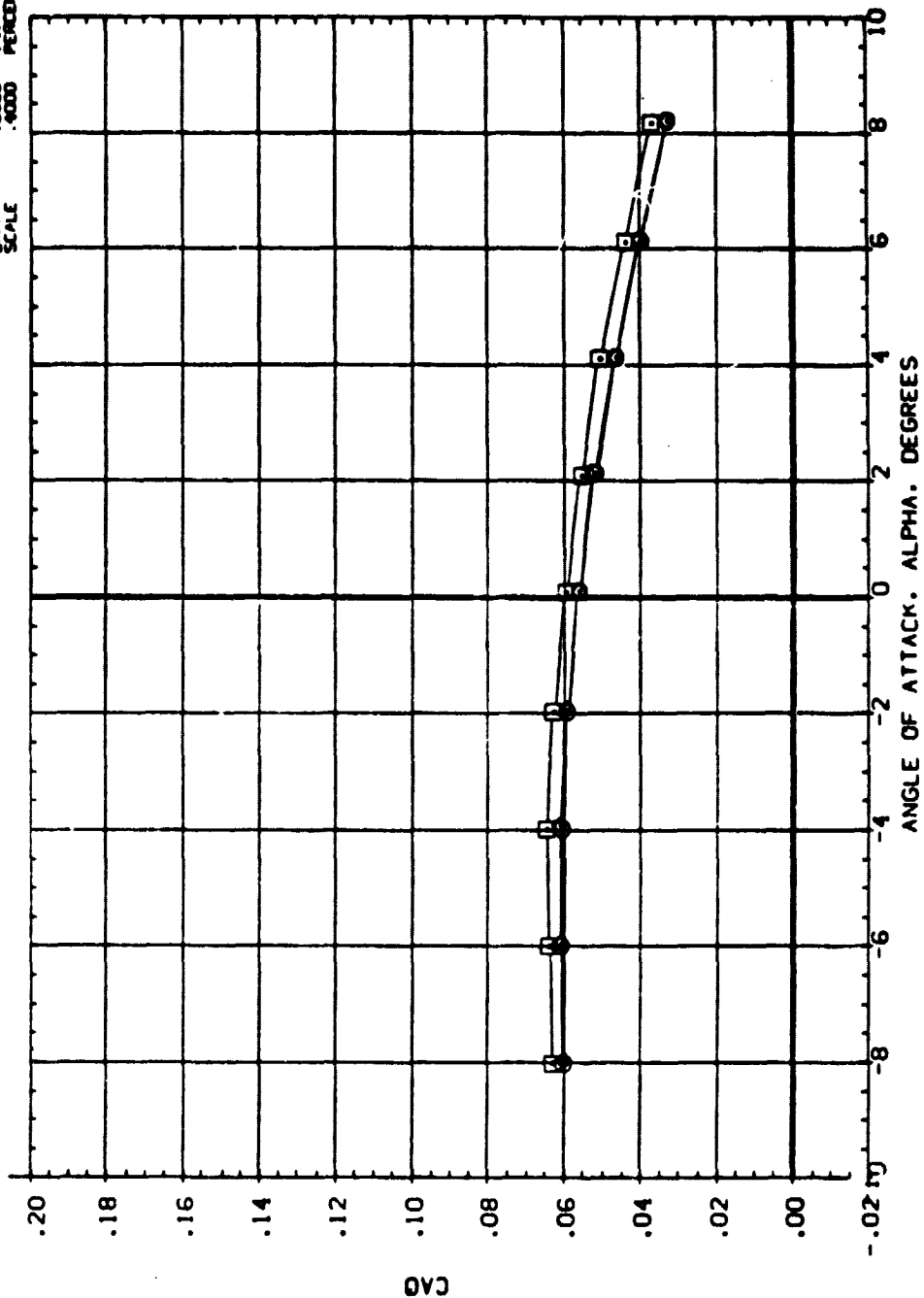
EFFECT OF BODY FLAP

(G)MACH = 1.25

DATA SET SYMBOL: (FA2808) (FA2810) (FA2813)

CONFIGURATION DESCRIPTION: FA28: MSFC INT 655: CONF IG: 02N2Z2MPAATT353
 FA28: MSFC INT 655: CONF IG: 02N2Z2MPAATT353
 FA28: MSFC INT 655: CONF IG: 02N2Z2MPAATT353

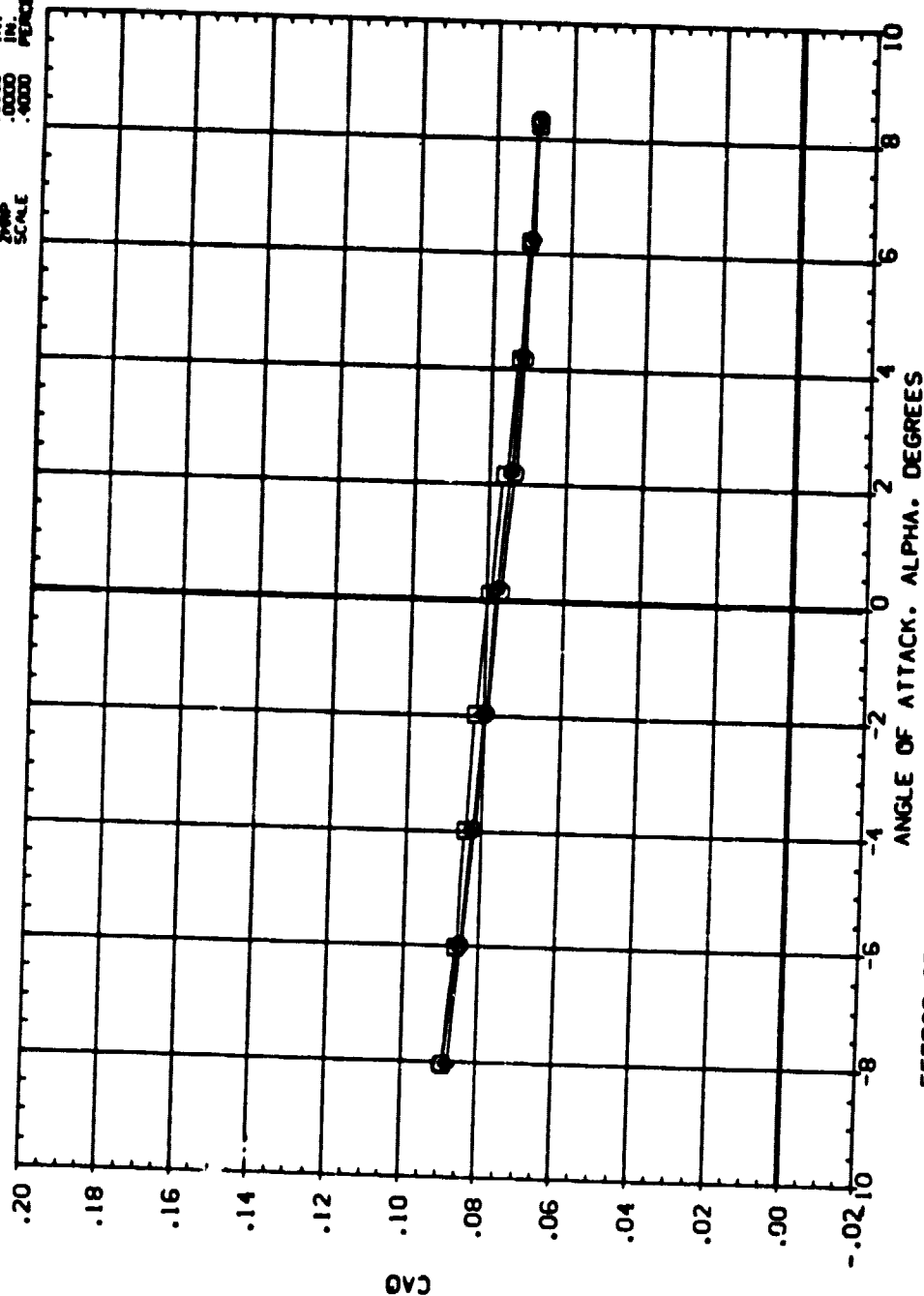
REFERENCE INFORMATION: SREF: 6.1980 SQ. IN
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 WREF: 2.7120 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT



(A)MACH = .60

DATA SET SYMBOL: CONFIGURATION DESCRIPTION:
 (FA2008) FA20. MSC. INT. 656. CONF. 16. CONV. 20000011253
 (FA2010) FA20. MSC. INT. 656. CONF. 16. CONV. 20000011253
 (FA2013) FA20. MSC. INT. 656. CONF. 16. CONV. 20000011253

REFERENCE INFORMATION:
 SET 6-1280 50 IN.
 LIFT 5.1612 IN.
 DRIFT 3.2470 IN.
 YAMP 2.7120 IN.
 ZAMP .0000 IN.
 SCALE .0000 PERCENT

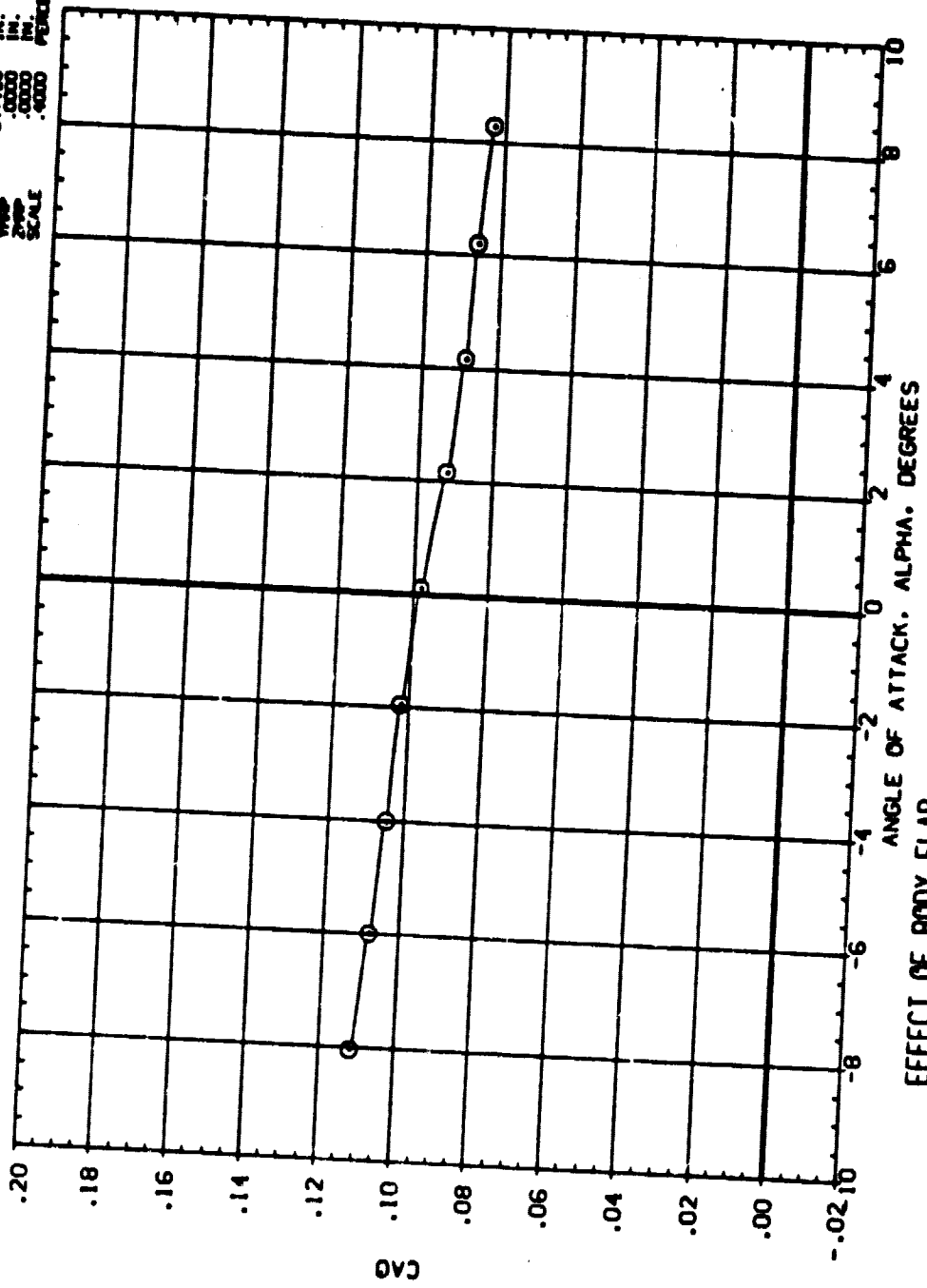


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL: FA20. MSFC TWT 656. CONFIG. 0002E3000A117353
 (FA2008) DATA NOT AVAILABLE
 (FA2010) DATA NOT AVAILABLE
 (FA2013) DATA NOT AVAILABLE

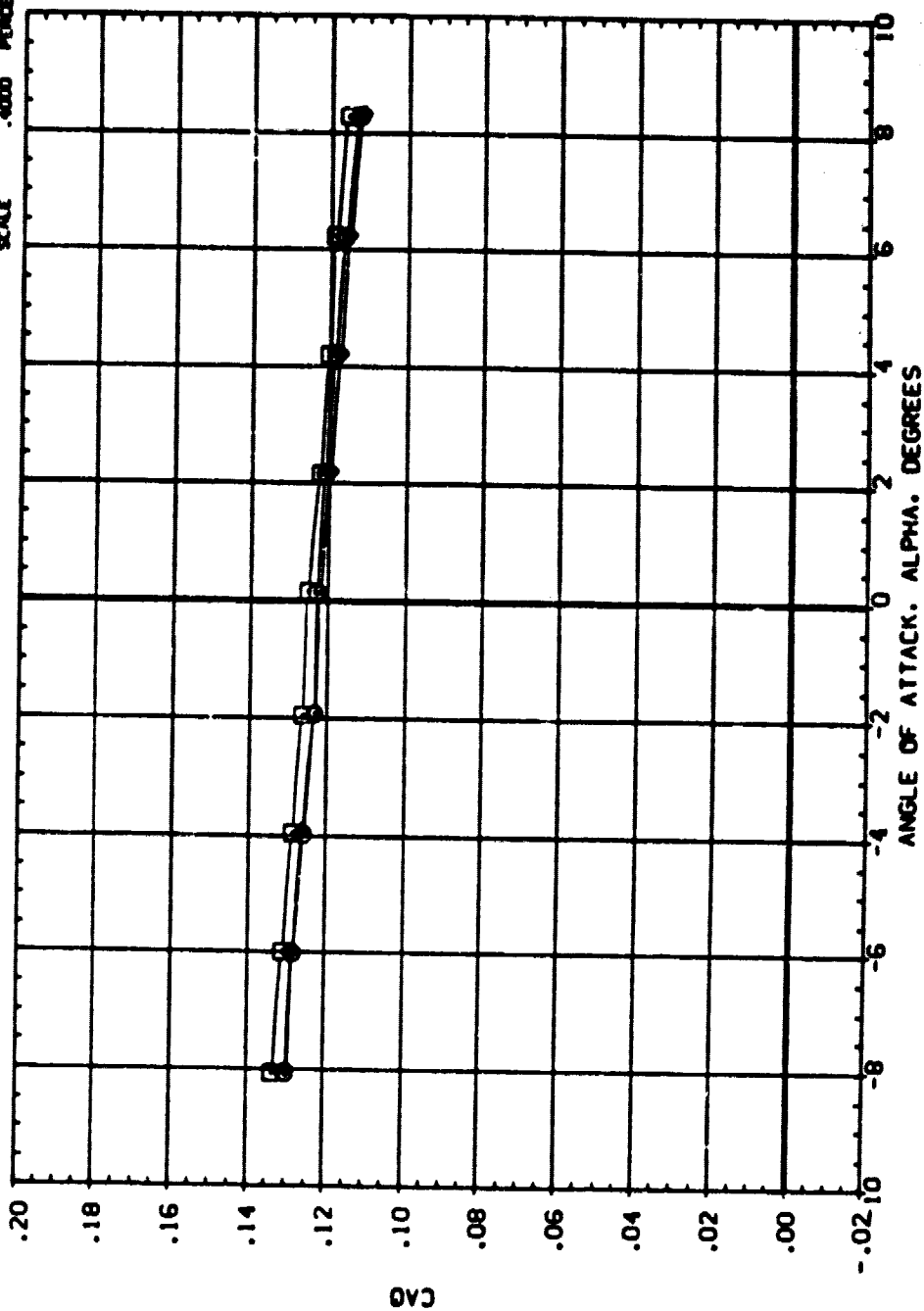
REFERENCE INFORMATION
 SET 8.1580 50. IN
 LST 8.1612 50. IN
 STW 8.1670 50. IN
 YW 8.1720 50. IN
 ZW 8.1770 50. IN
 SCALE .0000 IN.
 PERCH .0000 IN.



EFFECT OF BODY FLAP
 (C)MACH = .95

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA201) FA20. MSFC TVT 656. CONF 16. CONZEP00ATT133
 (FA210) FA20. MSFC TVT 656. CONF 16. CONZEP00ATT133
 (FA213) FA20. MSFC TVT 656. CONF 16. CONZEP00ATT133

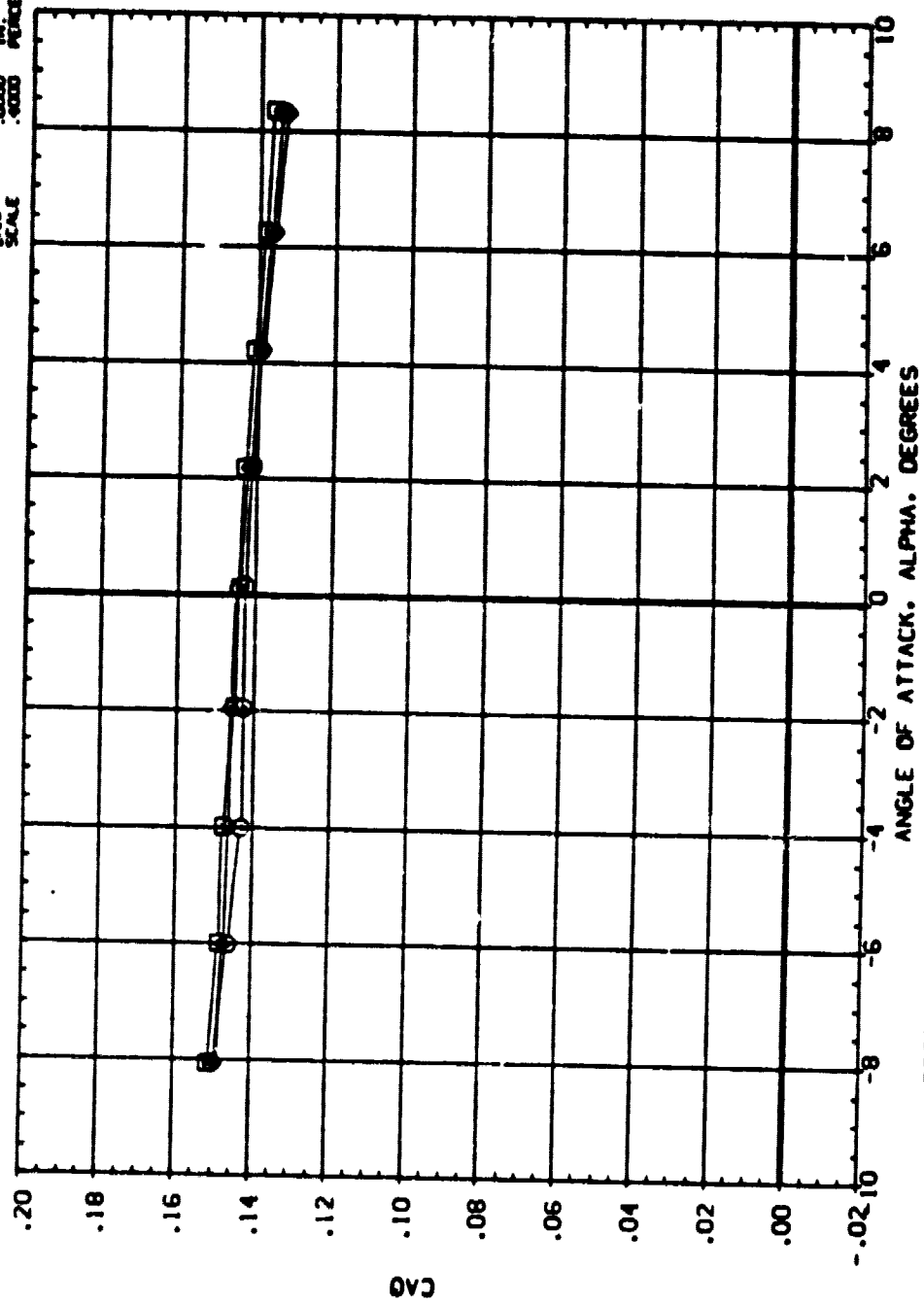
REFERENCE INFORMATION
 REF 8.1980 50. IN
 LIFT 3.1612 IN.
 DRAG 2.7170 IN.
 YAWP -.0000 IN.
 ZAWP -.0000 IN.
 SCALE .0000 PERCENT



EFFECT OF BODY FLAP

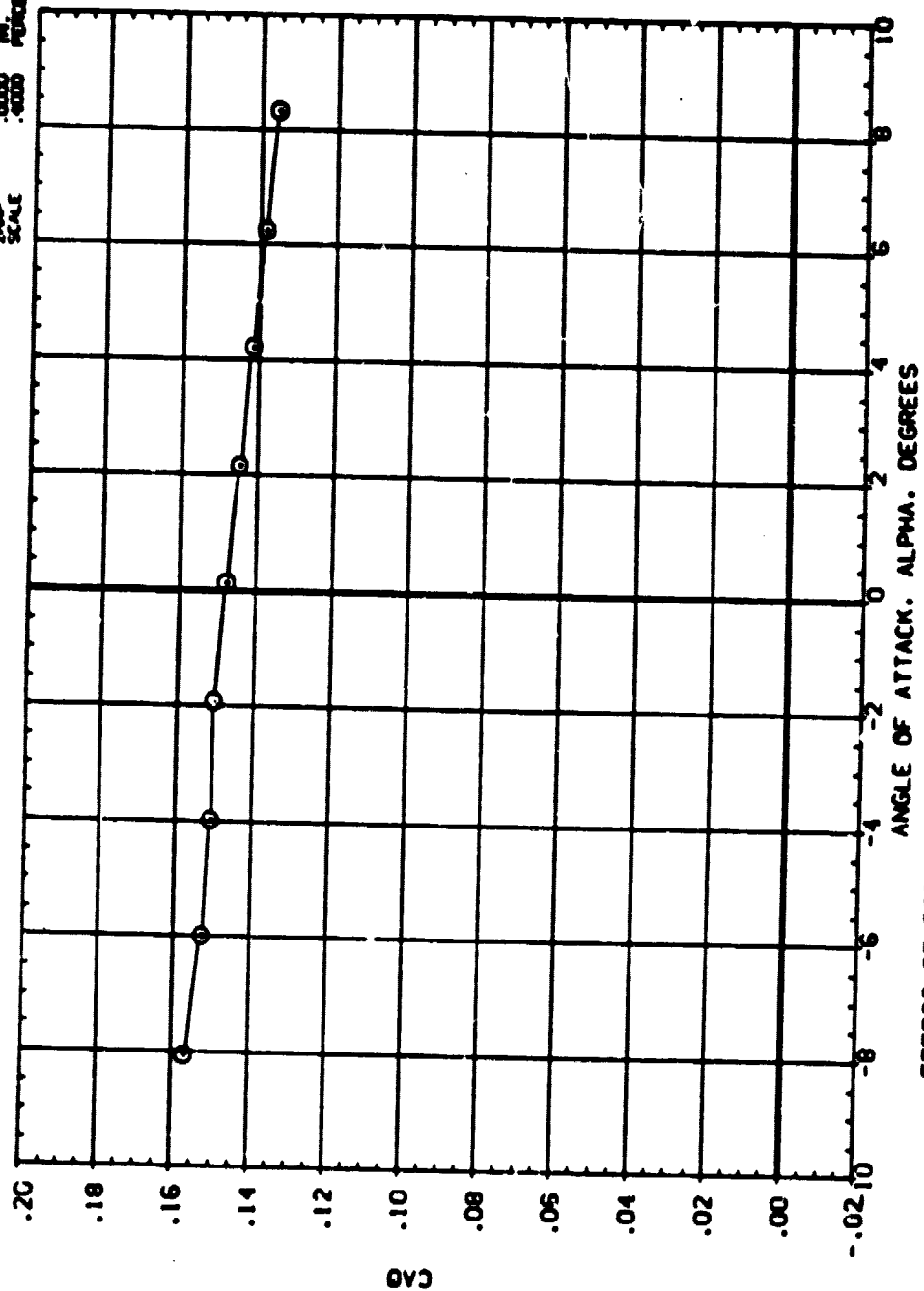
(0)MACH = 1.05

RETURN INFORMATION	
RET	6.190 IN.
LIEN	5.1617 IN.
DEF	3.7470 IN.
END	2.7120 IN.
TRA	.0000 IN.
TRM	.0000 IN.
SCALE	.0000 PERCENT


$$(E)_{\text{MACH}} = 1.10$$

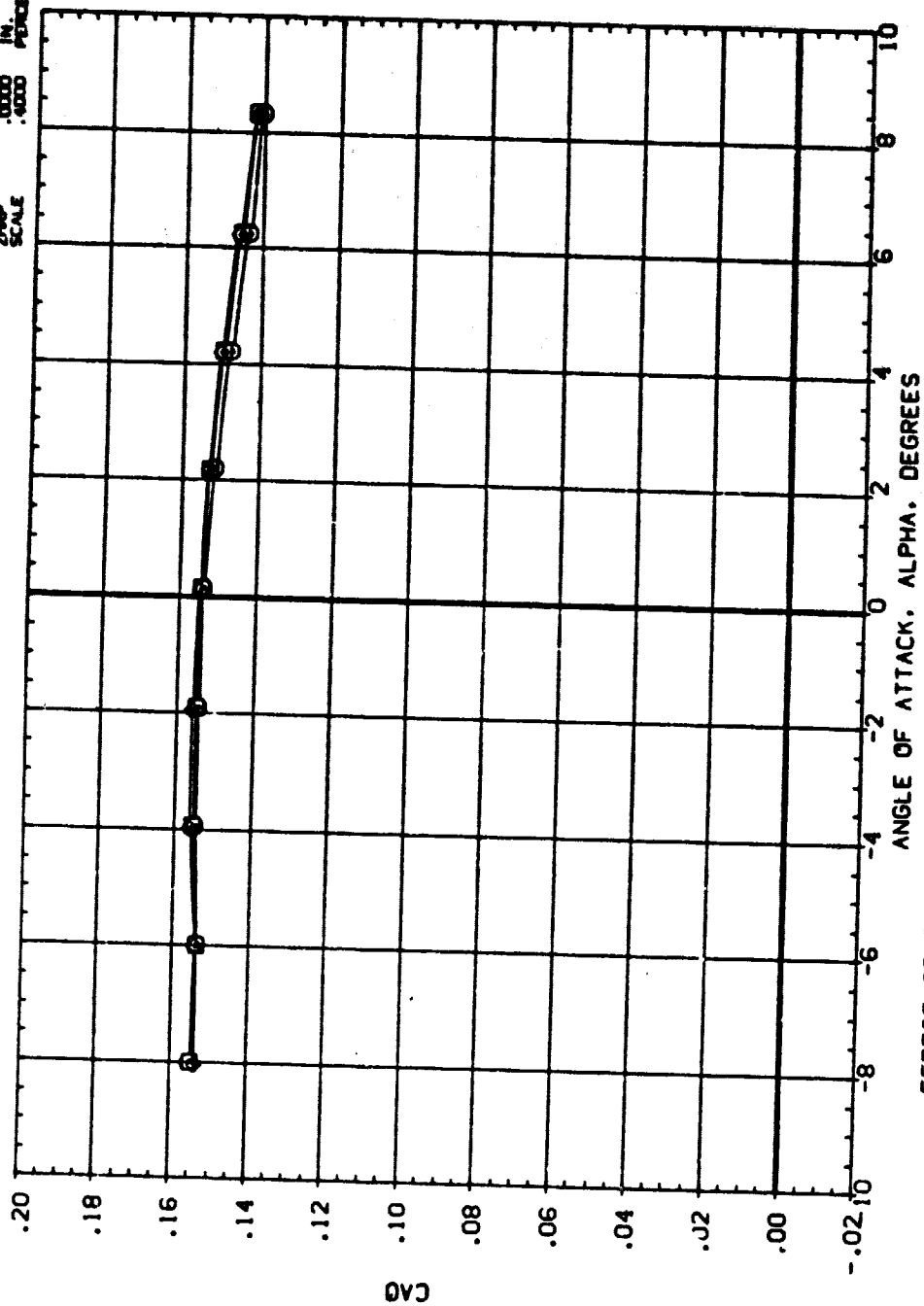
DATA SET SYMBOL: 0
 CONFIGURATION DESCRIPTION: FA20-105C TWT 626- CONF16. GEZE200A17353
 (FA2001) DATA NOT AVAILABLE
 (FA2010) DATA NOT AVAILABLE
 (FA2013) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SER: 8-1280 28: IN
 LOT: 8-1412 29: IN
 QNT: 3-1416 30: IN
 WTP: 2-7120 31: IN
 ZPP: 0000 32: IN
 SCALE: 0000 33: IN
 PUNCH: 0000 34: IN




DATA SET SYMBOL: 00
 CONFIGURATION DESCRIPTION:
 (FA2808) FA28: MSFC TVT 655: C04 I.G. 02V2E2P4PAATT1253
 (FA2810) FA28: MSFC TVT 655: C04 I.G. 02V2E2P4PAATT1253
 (FA2813) FA28: MSFC TVT 655: C04 I.G. 02V2E2P4PAATT1253

REFERENCE INFORMATION:
 SHEET 8: 1890 90: IN.
 LREF 3: 1612 IN.
 BREF 2: 7470 IN.
 WREF 2: 7470 IN.
 ZREF 1: 0000 IN.
 SCALE .0000 PERIOD

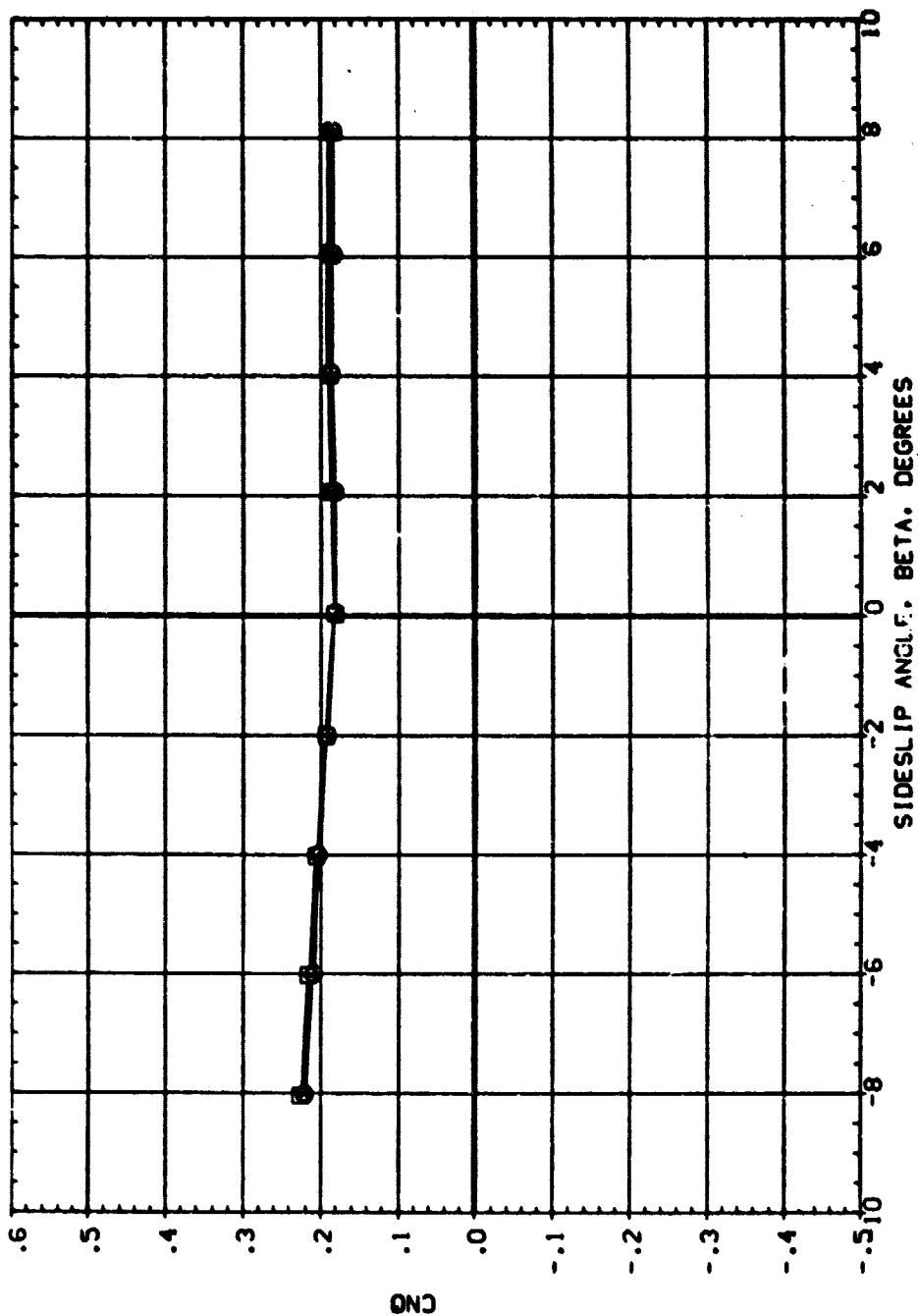


EFFECT OF BODY FLAP

(G)MACH = 1.25

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION: FA28. MSFC TWT 655. CONF IG. 03VZ20PAA11253
 (FA2809) FA28. MSFC TWT 655. CONF IG. 03VZ20PAA11253
 (FA2811) FA28. MSFC TWT 655. CONF IG. 03VZ20PAA11253
 (FA2812) FA28. MSFC TWT 655. CONF IG. 03VZ20PAA11253

REFERENCE INFORMATION:
 REF: 6.1580 IN.
 LIFT: 6.1612 IN.
 DRAG: 3.1476 IN.
 YPRP: 3.7120 IN.
 ZPRP: .0000 IN.
 SCALE: .0000 PERIOD: .0000

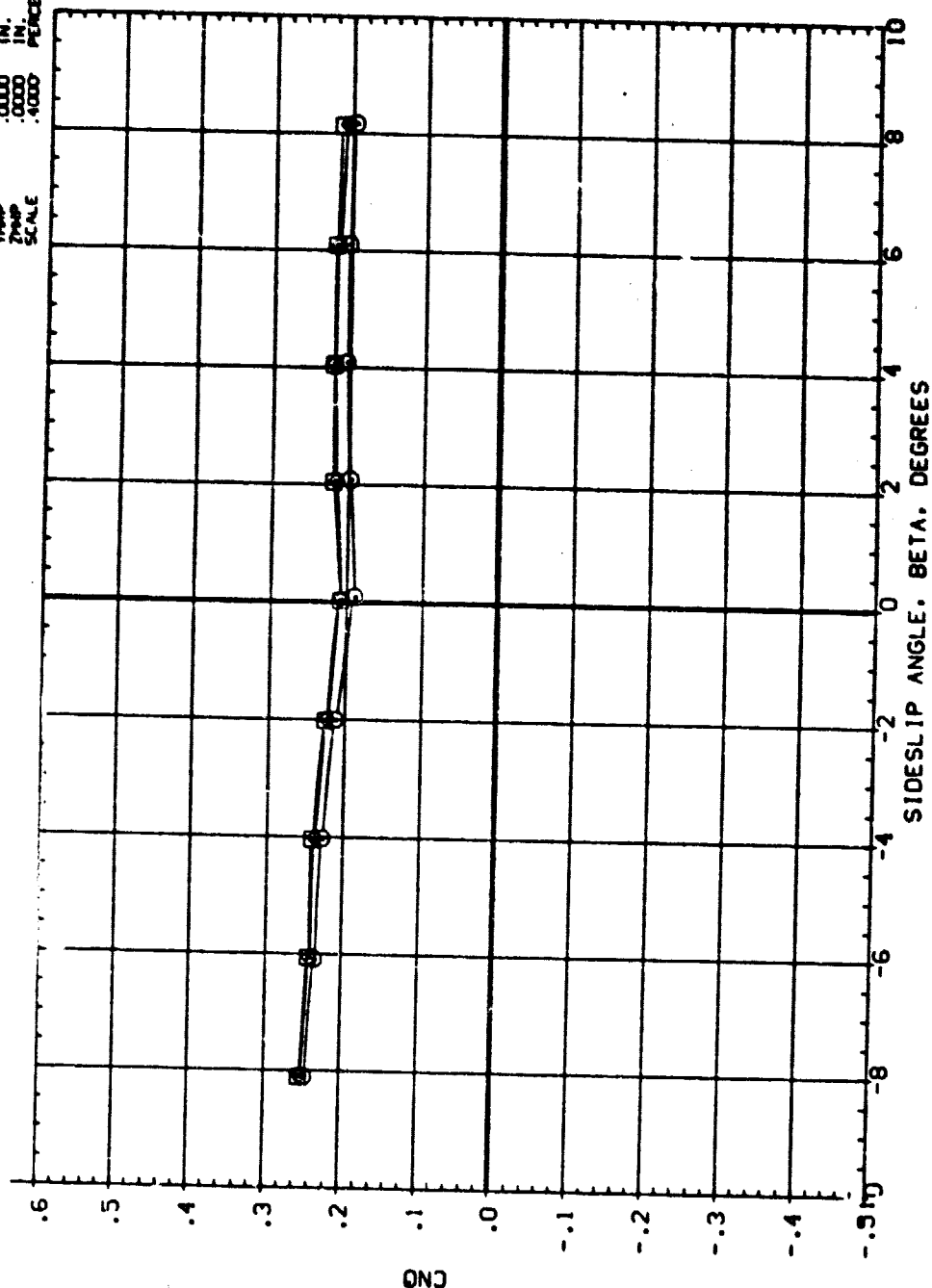


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2809) FA28. MSC 1W1 656. CONF IG. 0202E2P4PAATT353
 (FA2811) FA28. MSC 1W1 656. CONF IG. 0202E2P4PAATT353
 (FA2812) FA28. MSC 1W1 656. CONF IG. 0202E2P4PAATT353

REFERENCE INFORMATION
 SET 6.1800 SQ. IN.
 LINE 5.1612 IN.
 WAVE 3.7470 IN.
 WAVE 2.7170 IN.
 WAVE .0000 IN.
 WAVE .0000 IN.
 SCALE .0000 PERCENT

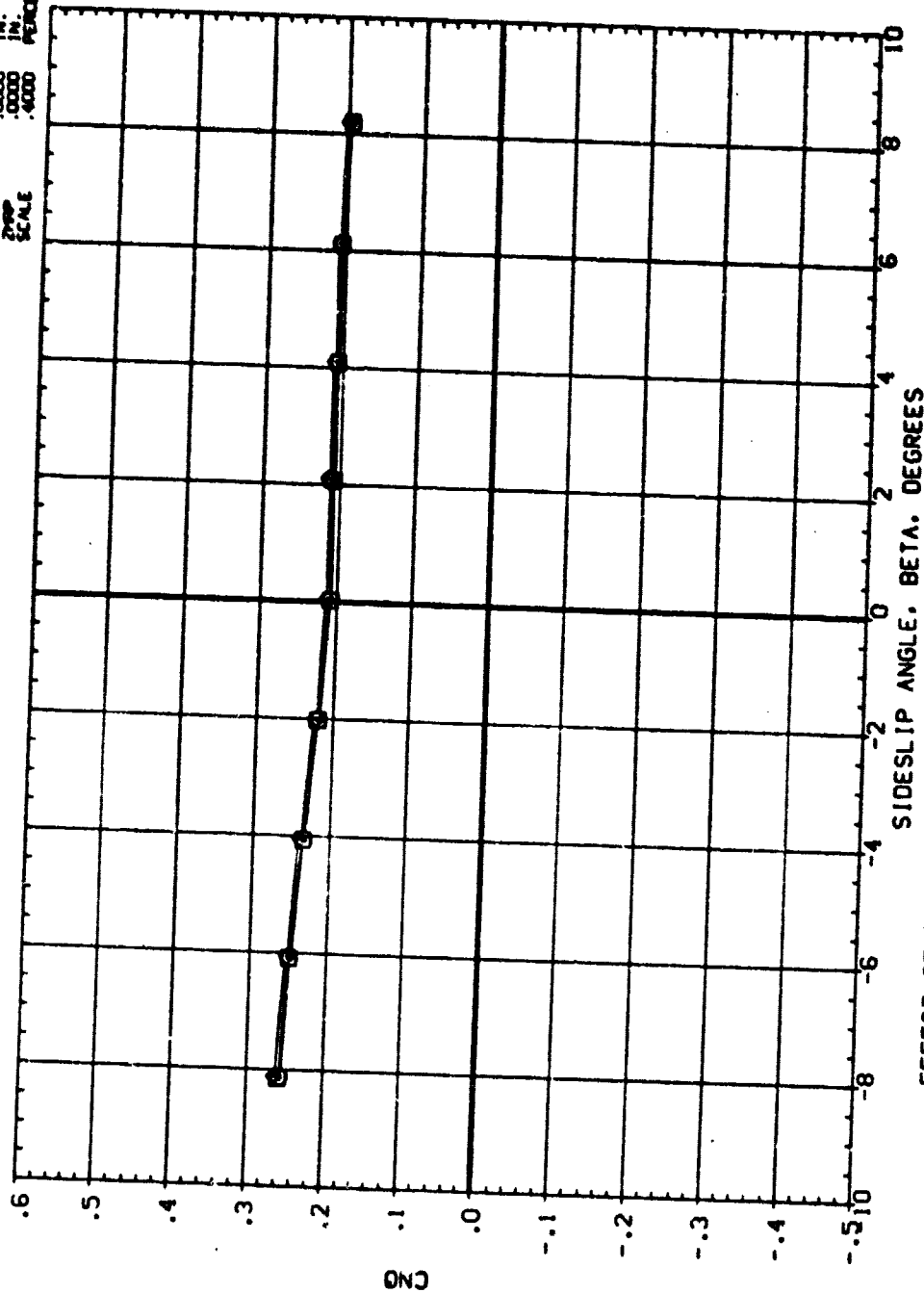


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) 0 FA28. MSFC TWT 556. CONF 16. 00ZEPNPAATT253
 (FA2811) 0 FA28. MSFC TWT 556. CONF 16. 00ZEPNPAATT253
 (FA2812) 0 FA28. MSFC TWT 556. CONF 16. 00ZEPNPAATT253

REFERENCE INFORMATION
 REF 6.1580 50. IN
 LREF 5.1512 IN.
 BREF 3.7470 IN.
 TREF 2.7120 IN.
 TREF .0000 IN.
 SCALE .4000 PERCENT

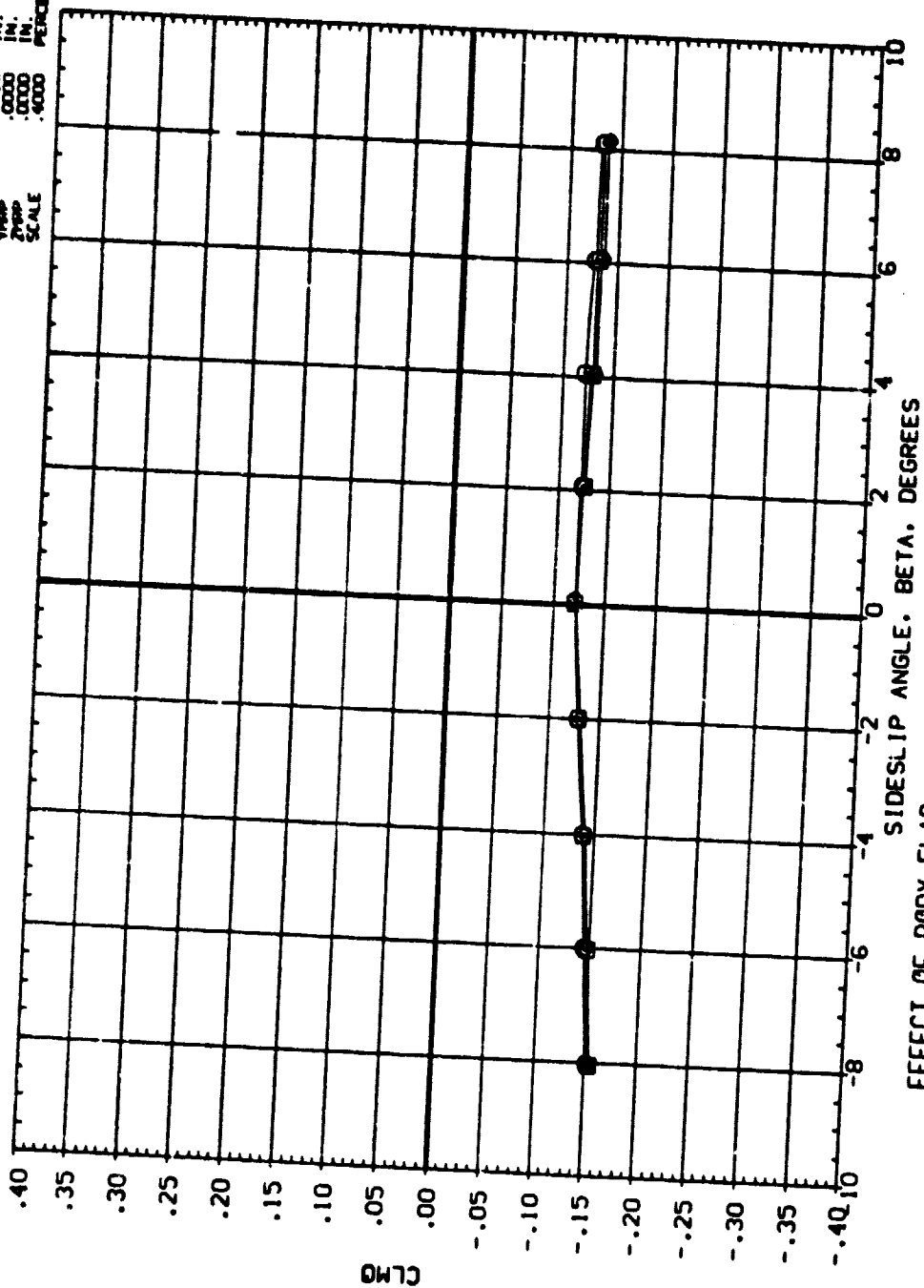


EFFECT OF BODY FLAP

(0)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) 0 FA28. MSFC TWT 656. CONF IG. 02/ZE 200PAATI353
 (FA2811) 0 FA28. MSFC TWT 656. CONF IG. 02/ZE 200PAATI353
 (FA2812) 0 FA28. MSFC TWT 656. CONF IG. 02/ZE 200PAATI353

REFERENCE INFORMATION
 SHEET 6.1980 SQ. IN.
 UNIT 5.1612 IN.
 SHEET 3.7470 IN.
 SHEET 2.7120 IN.
 YHSP .0000 IN.
 ZHSP .0000 IN.
 SCALE .0000 PERCENT

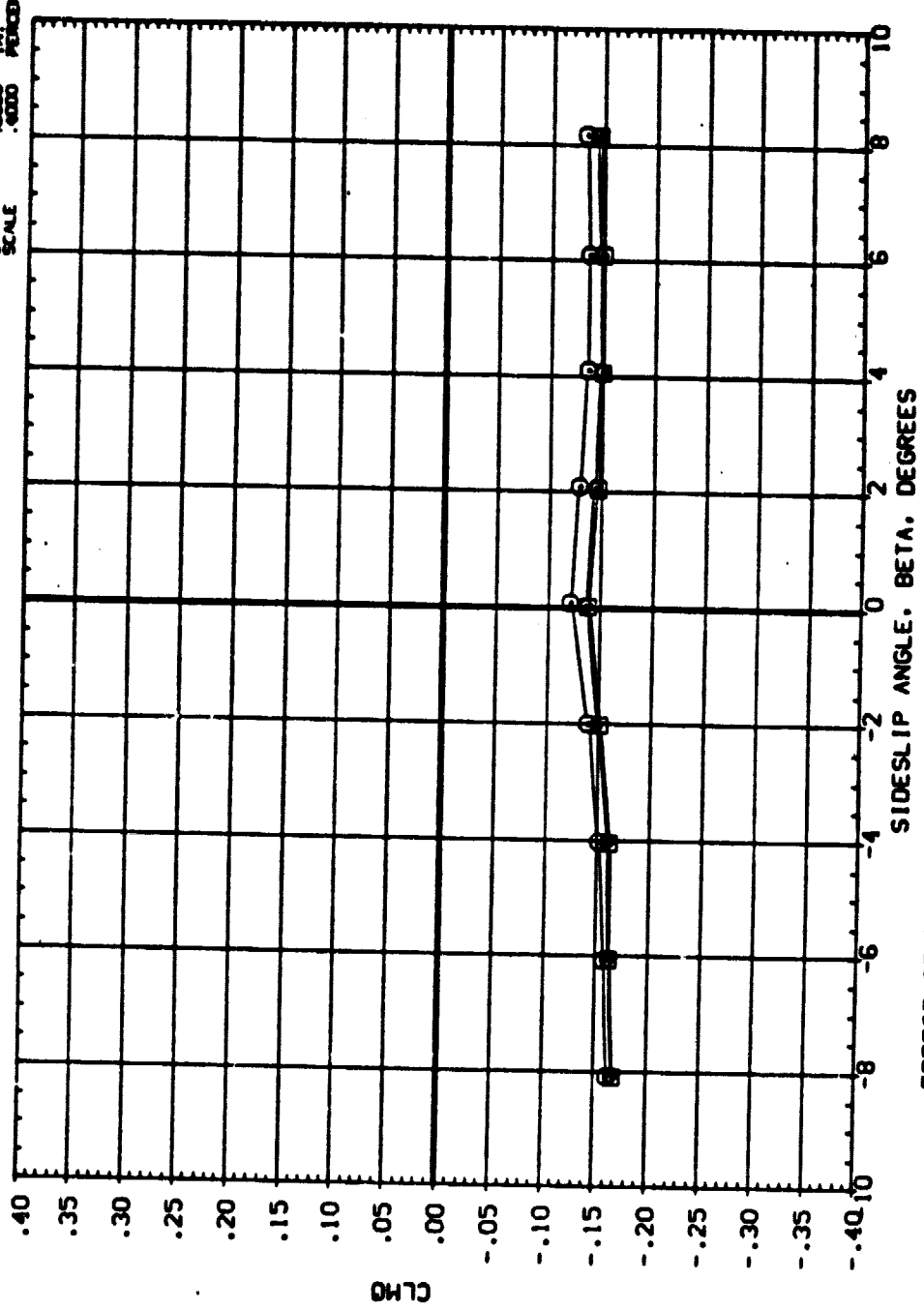


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) 8 FA28. MFTC TVT 656. CONF 16. GUNZEPMAIT33
 (FA2811) 8 FA28. MFTC TVT 656. CONF 16. GUNZEPMAIT33
 (FA2812) 8 FA28. MFTC TVT 656. CONF 16. GUNZEPMAIT33

REFERENCE INFORMATION
 SREF 6.1860 IN. IN.
 LREF 5.1612 IN. IN.
 MREF 3.7470 IN. IN.
 PREF 2.7120 IN. IN.
 ZREF .0000 IN. IN.
 SCALE .0000 IN. IN.

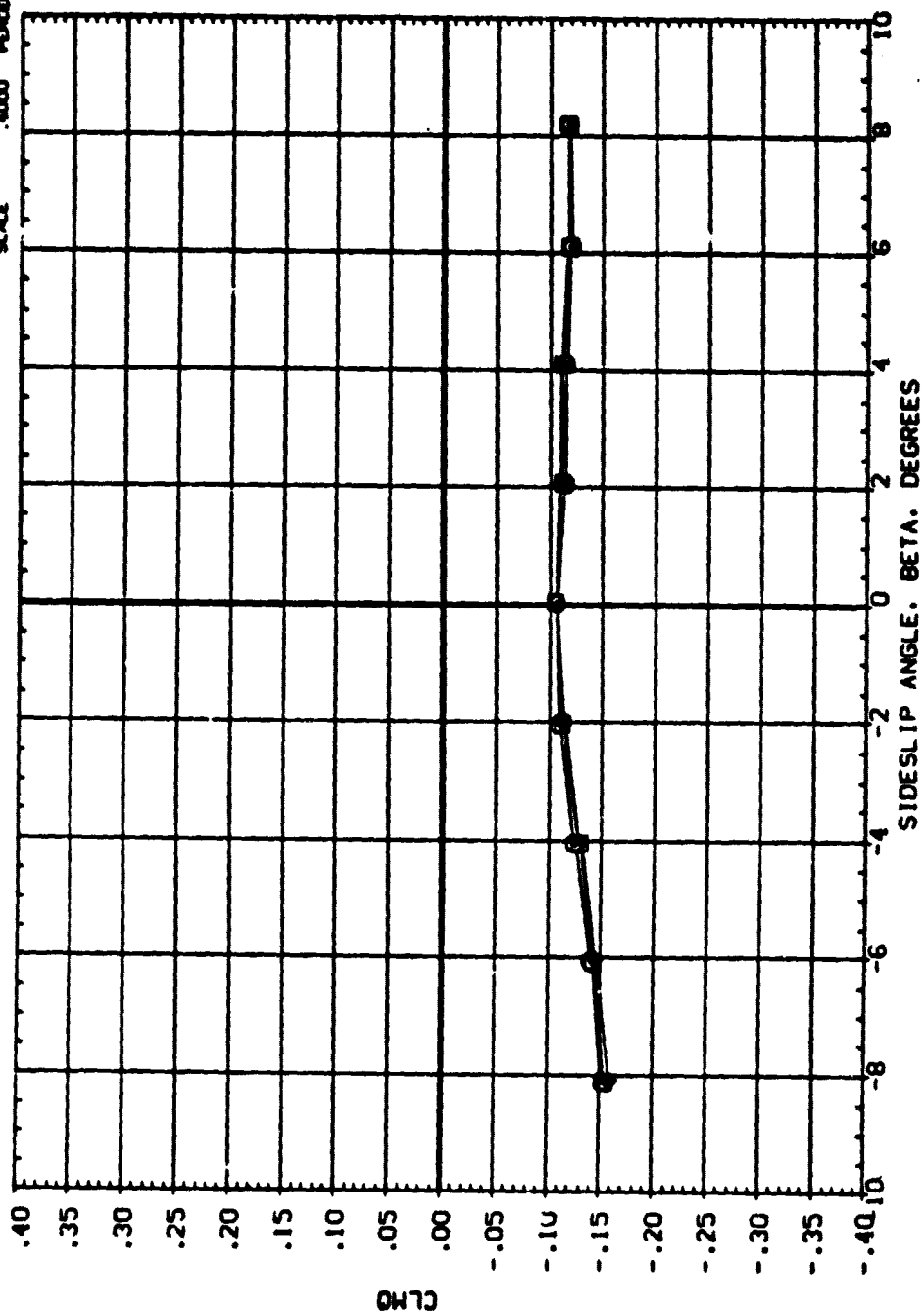


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (FA2809) 0 FARE. MSCC INT 655. CONF IG. 02VZ2PMAAT133
 (FA2811) 0 FARE. MSCC INT 655. CONF IG. 02VZ2PMAAT133
 (FA2812) 0 FARE. MSCC INT 655. CONF IG. 02VZ2PMAAT133

REFERENCE INFORMATION
 REF 5.1580 30. IN
 LREF 5.1512 30. IN
 REF 3.7470 30. IN
 YREF 2.7120 30. IN
 ZREF .0000 30. IN
 SCALE .0000 PERCENT

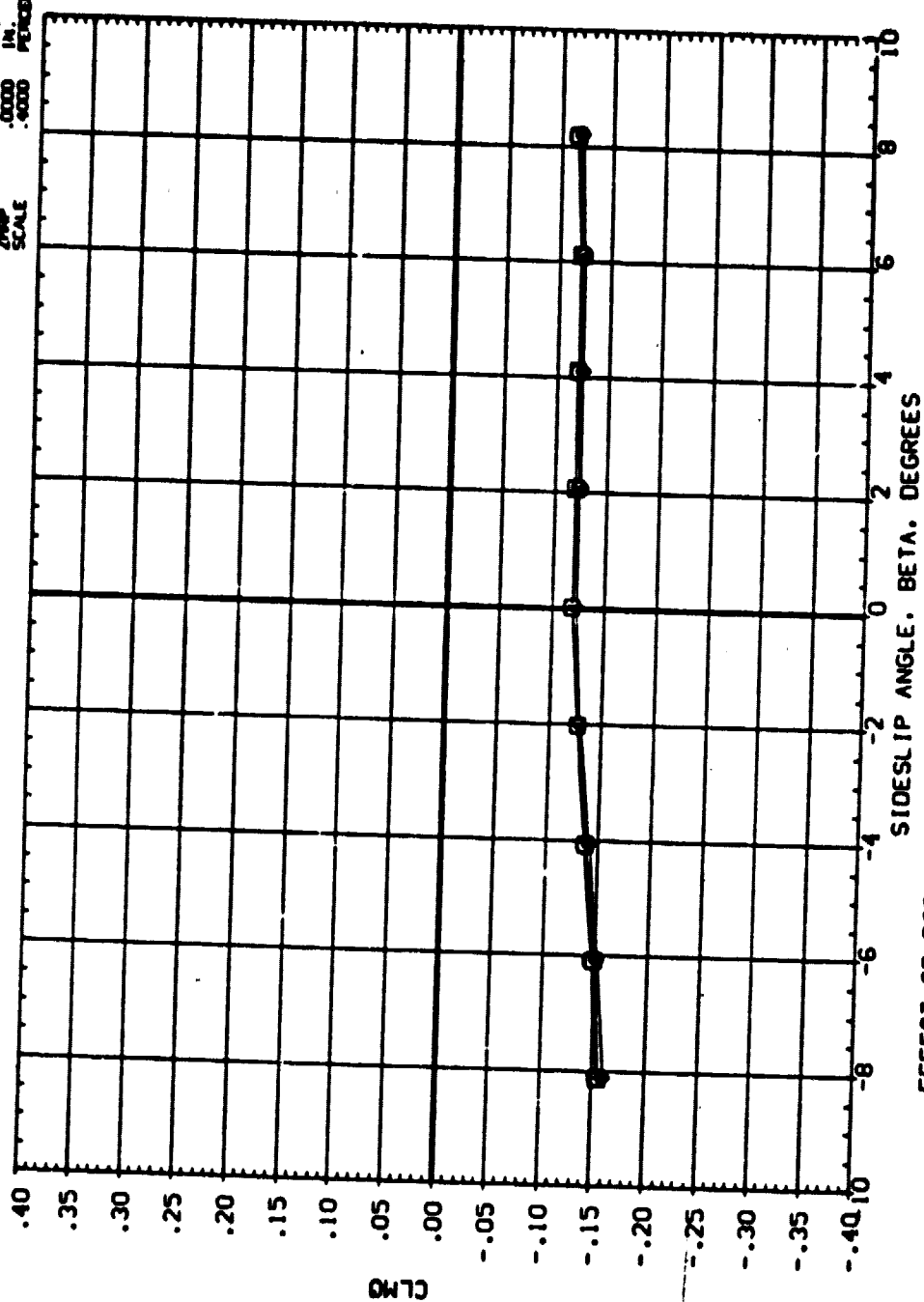


EFFECT OF BODY FLAP

(C)MACH = 1.05

FA28.	MSFC	TWT	656.	COF 16.	02N2E 23P04W 11353
FA28.	MSFC	TWT	656.	COF 16.	02N2E 23P04W 11353
FA28.	MSFC	TWT	656.	COF 16.	02N2E 23P04W 11353

REFCDE	9.1980	SD	IN.
LREF	5.1612	IN.	
REF	3.7470	IN.	
REF	2.7120	IN.	
REF	.0000	IN.	
REF	.0000	IN.	
SCALE	.0000	PERCENT	

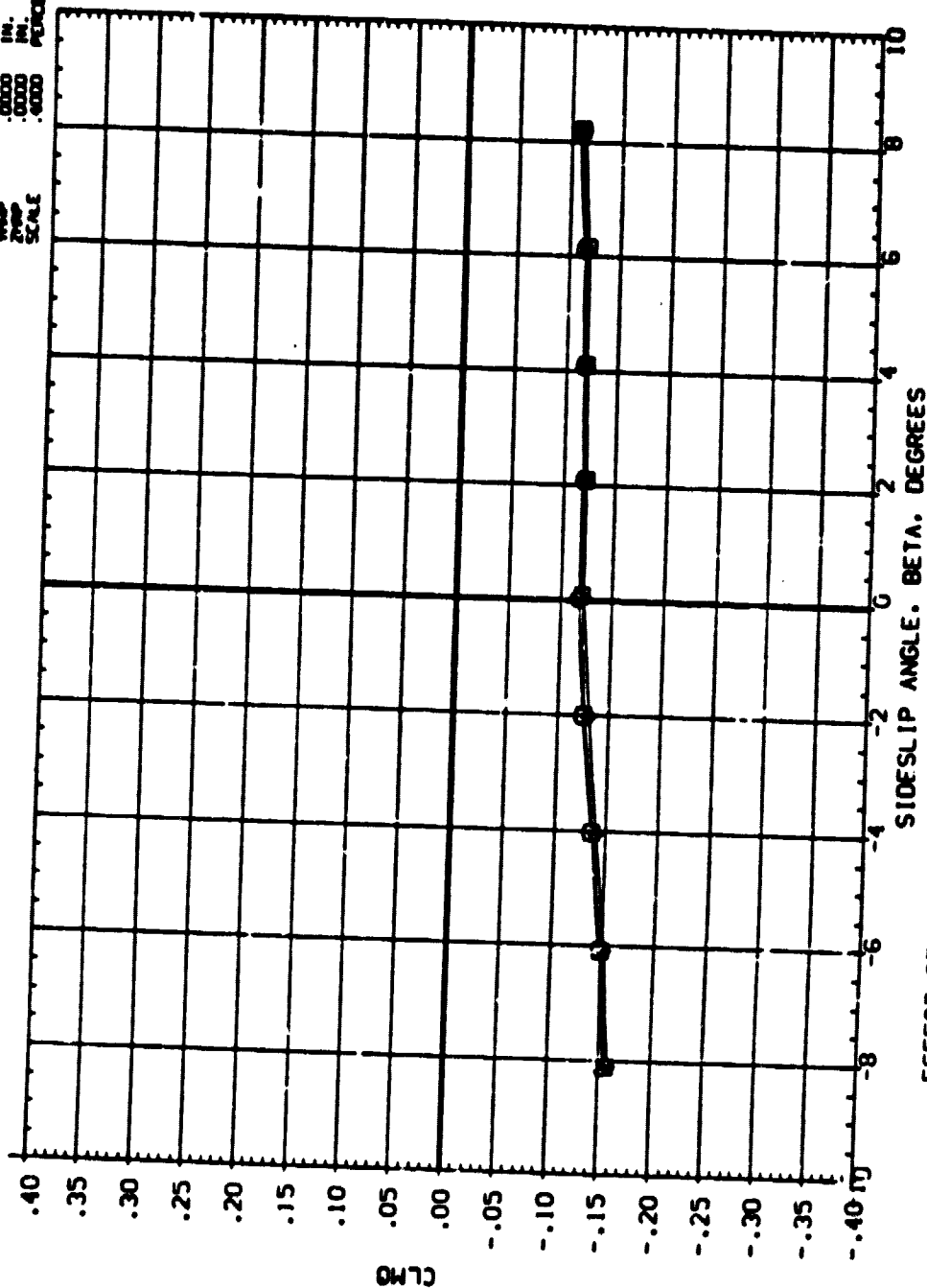


EFFECT OF BODY FLAP

01.1 = НЗУН(0)

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (PAG009) 0 FA28. MSFC TWT 656. CONF 16. ROZEZMPAAIT753
 (PAG011) 0 FA28. MSFC TWT 656. CONF 16. ROZEZMPAAIT753
 (PAG012) 0 FA28. MSFC TWT 656. CONF 16. ROZEZMPAAIT753

REFERENCE INFORMATION
 REF 9.1580 50. IN.
 LAG 5.1612 IN.
 WAP 2.7470 IN.
 ZWAP .0000 IN.
 SCALE .0000 PERCENT

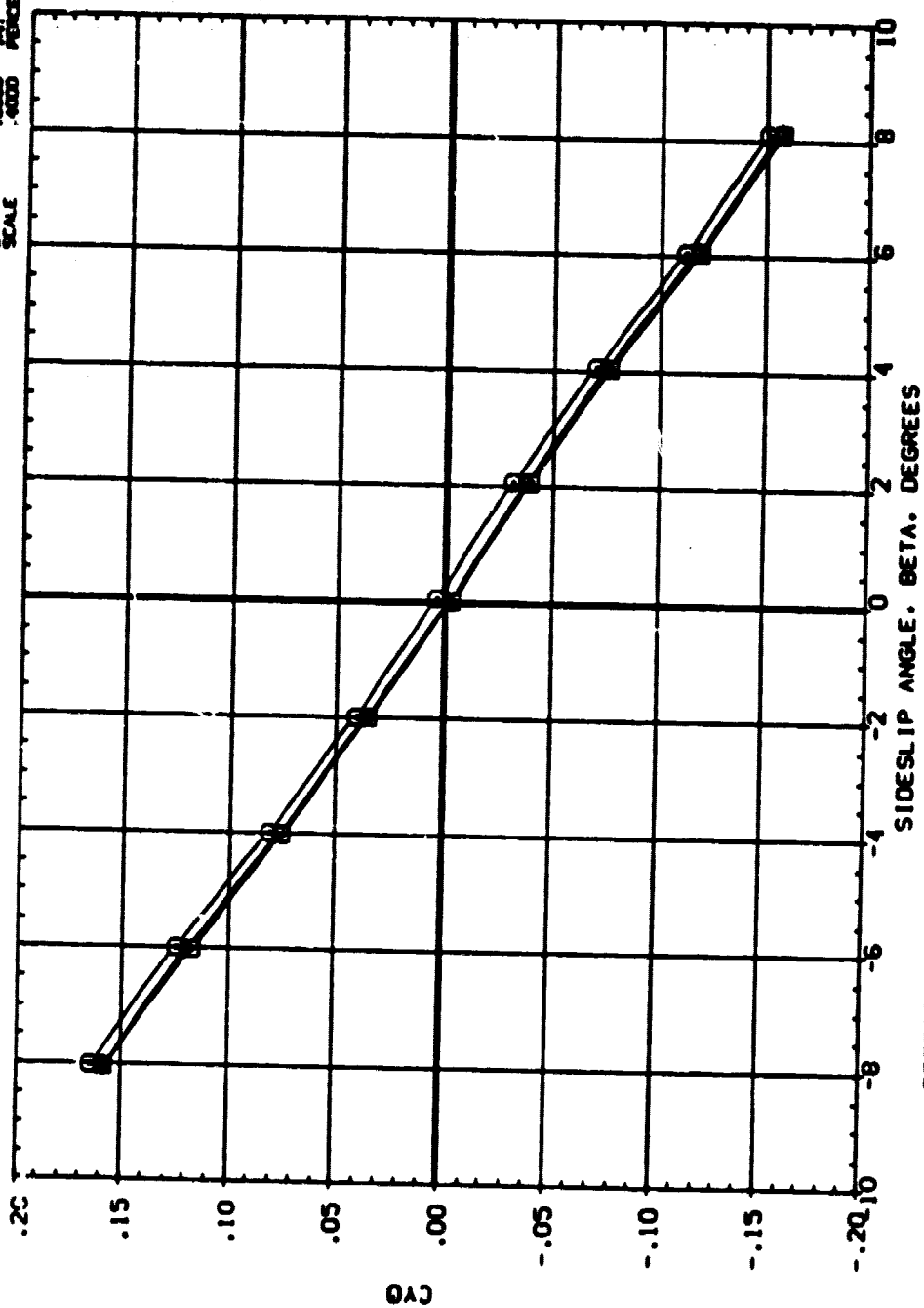


EFFECT OF BODY FLAP

(E)MACH = 1.25

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: CYCLES OF 16.
 (FASB1) CASE: POST TWT CASE: CYCLES OF 16.
 (FASB2) CASE: POST TWT CASE: CYCLES OF 16.
 (FASB3) CASE: POST TWT CASE: CYCLES OF 16.

REFERENCE INFORMATION
 UNIT: IN.
 DATE: 1962
 SCALE: 1.0000
 PERIOD: 1.0000

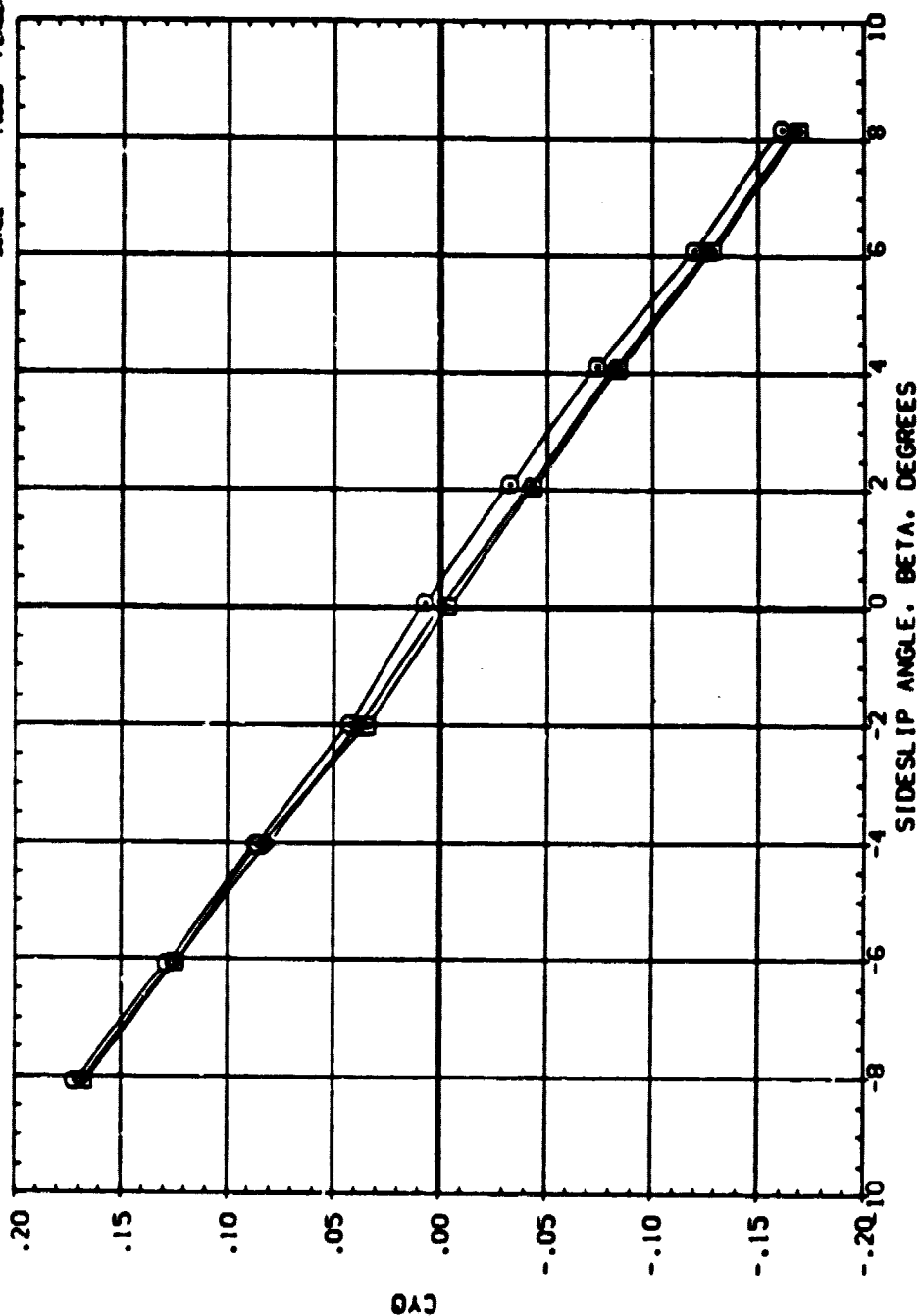


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL: 8
 (FA2009) FA20: MFTC TVT GSE: CONF16: G0VZ:200AA11353
 (FA2011) FA20: MFTC TVT GSE: CONF16: G0VZ:200AA11353
 (FA2012) FA20: MFTC TVT GSE: CONF16: G0VZ:200AA11353

REFERENCE INFORMATION
 SET 8.1980 50 IN.
 LIFT 5.1612 IN.
 DRIFT 3.3470 IN.
 WARP 2.7120 IN.
 ZWAP .0000 IN.
 SCALE .0000 PERCENT

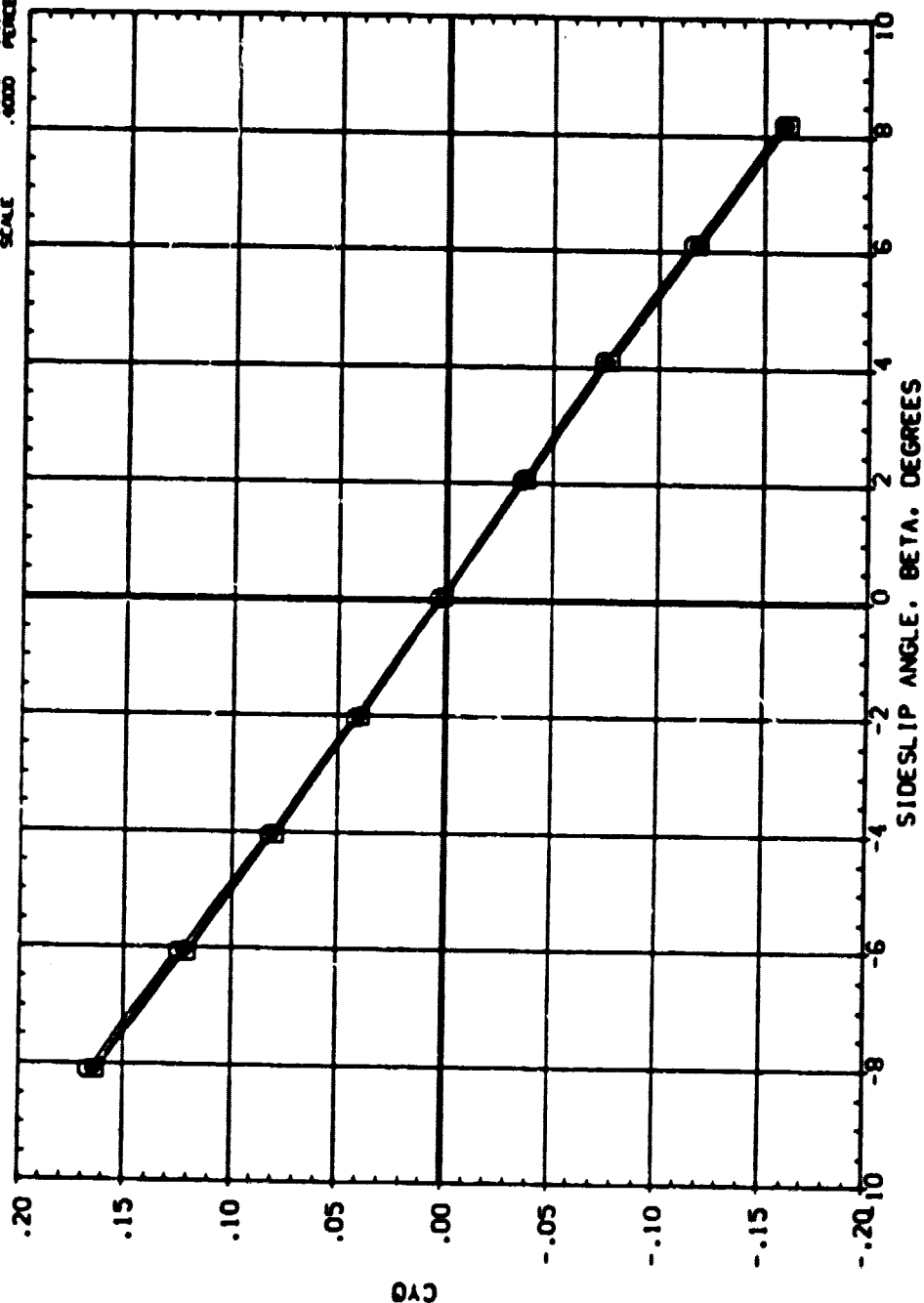


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SWELL. CONFIGURATION DESCRIPTION
 (FA2009) FA20: H02E T01 02E: C02F 10: C02E SP00A1123
 (FA2011) FA20: H02E T01 02E: C02F 10: C02E SP00A1123
 (FA2012) FA20: H02E T01 02E: C02F 10: C02E SP00A1123

REFERENCE INFORMATION
 SET: 6.1580 IN
 LIFT: 3.1612 IN
 DRAG: 3.7470 IN
 MOM: 2.7120 IN
 YPR: .0000 IN
 ZPR: .0000 IN
 SCALE: .0000 PERCH



EFFECT OF BODY FLAP

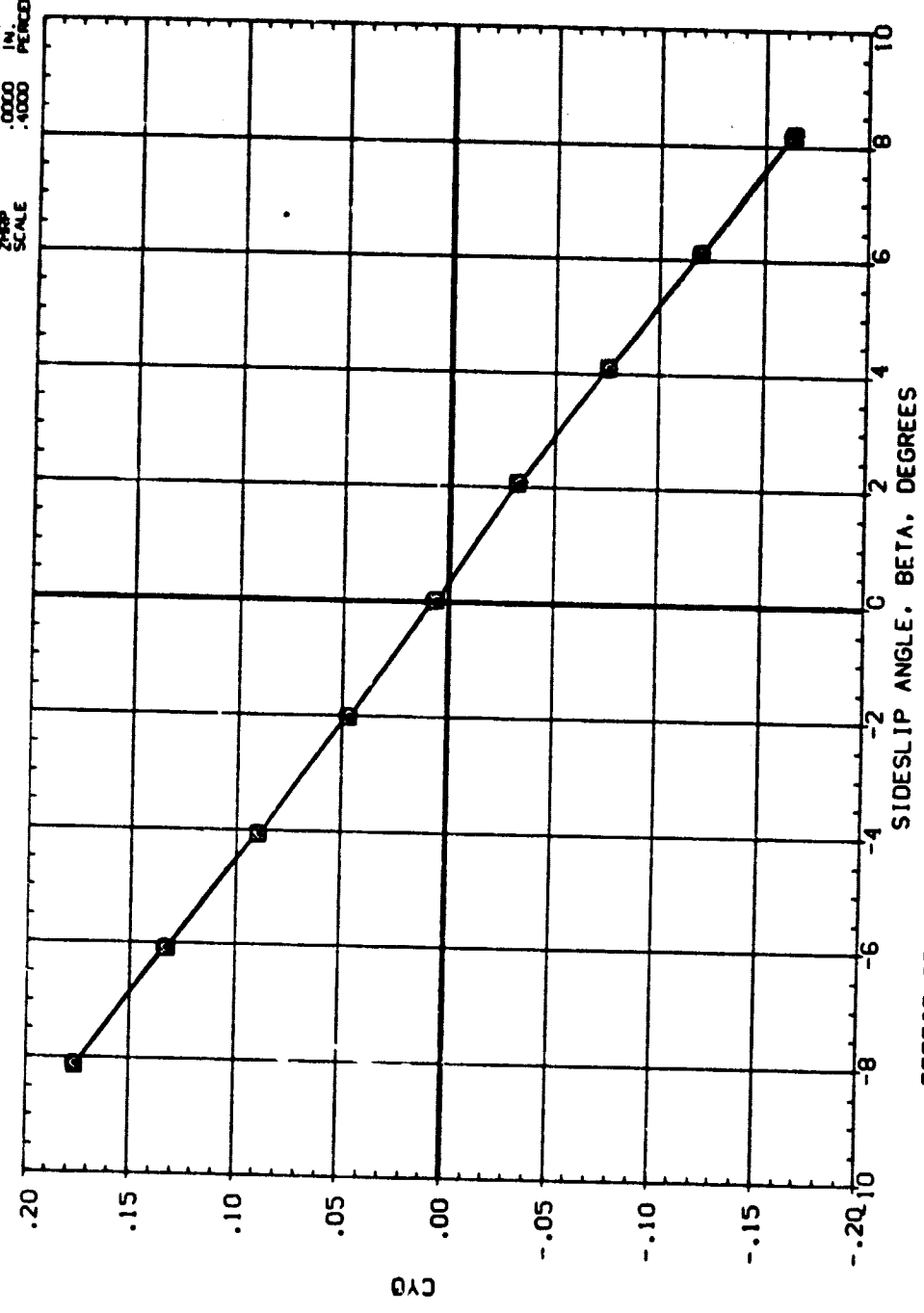
(C)MACH = 1.05

DATA SET SYMBOL: (FA2809) (FA2811) (FA2812)

CONFIGURATION DESCRIPTION: FA28. MSFC INT 656. CONF IG. 02VZ28MPATT1353
 FA28. MSFC INT 656. CONF IG. 02VZ28MPATT1353
 FA28. MSFC INT 656. CONF IG. 02VZ28MPATT1353


REFERENCE INFORMATION

SREF	6.1980	IN.
LREF	5.1612	IN.
BREF	2.7470	IN.
XPRP	2.7120	IN.
YPRP	.0000	IN.
ZPRP	.0000	IN.
SCALE	.4000	PERCENT

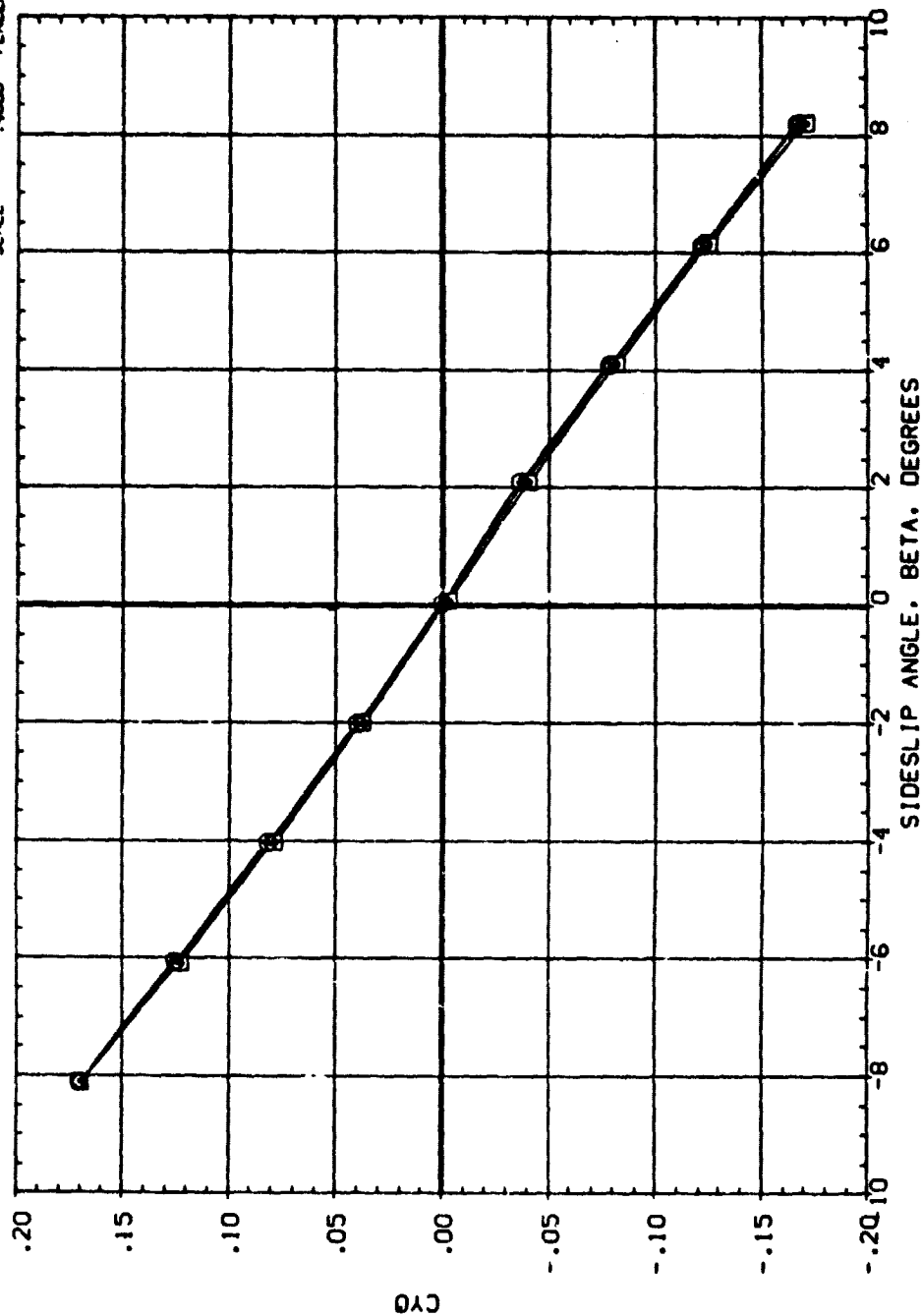


EFFECT OF BODY FLAP

(0)MACH = 1.10

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FA2809) FA28. HSC TWT 656. CONF IG. ORVLEZPAAAT1253
 (FA2811) FA28. HSC TWT 656. CONF IG. ORVLEZPAAAT1253
 (FA2812) FA28. HSC TWT 656. CONF IG. ORVLEZPAAAT1253

REFERENCE INFORMATION:
 SREF 6.1960 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 TREF .0000 IN.
 SCALE .0000 PERCENT

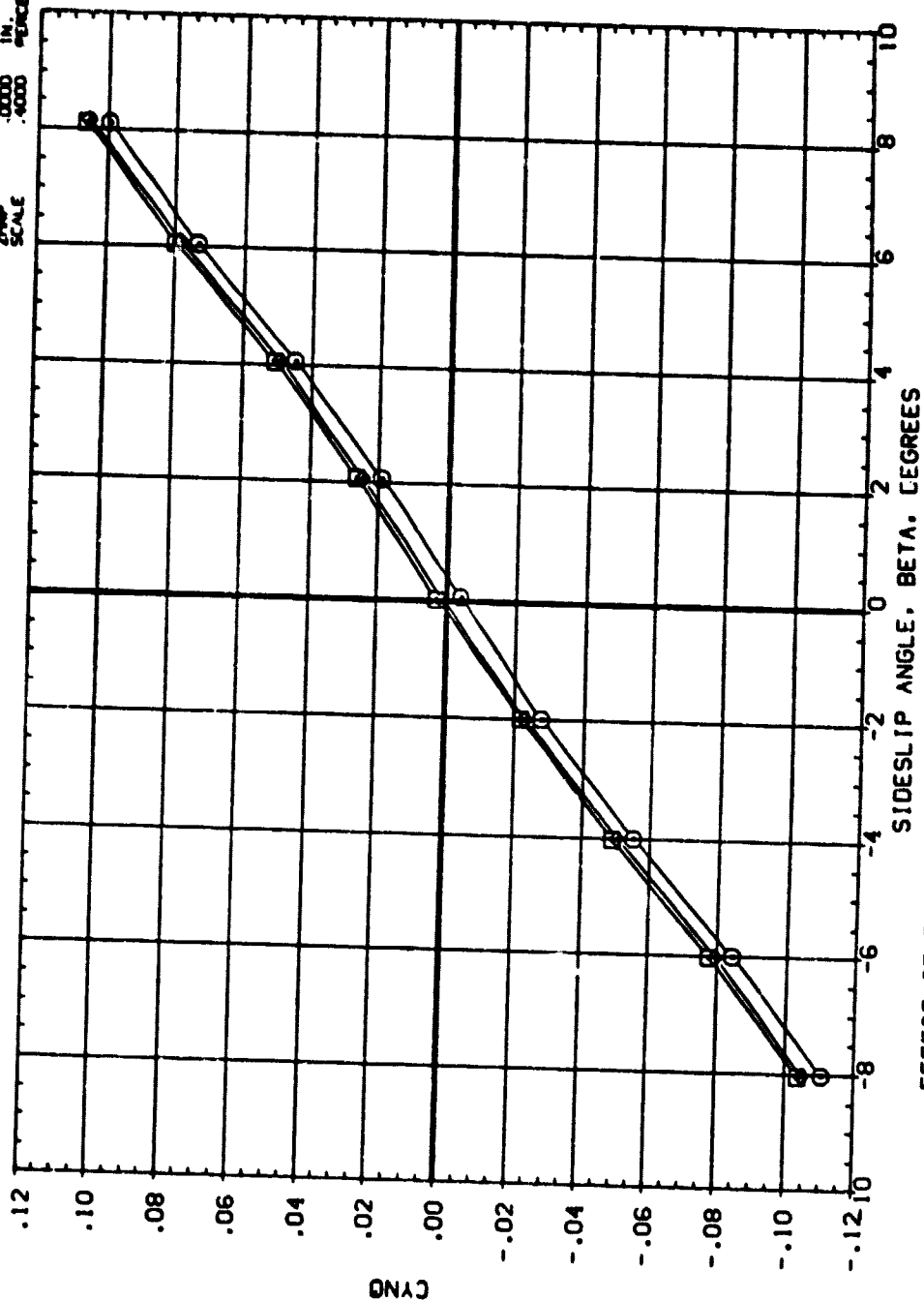


EFFECT OF BODY FLAP

(E)MACH = 1.25

DATA SET SYMBOL: (FA2809) (FA2811) (FA2812)
 CONFIGURATION DESCRIPTION: FA28. MSFC TWT 656. CONFIG. DOWELPMPATT353
 FA28. MSFC TWT 656. CONFIG. DOWELPMPATT353
 FA28. MSFC TWT 656. CONFIG. DOWELPMPATT353

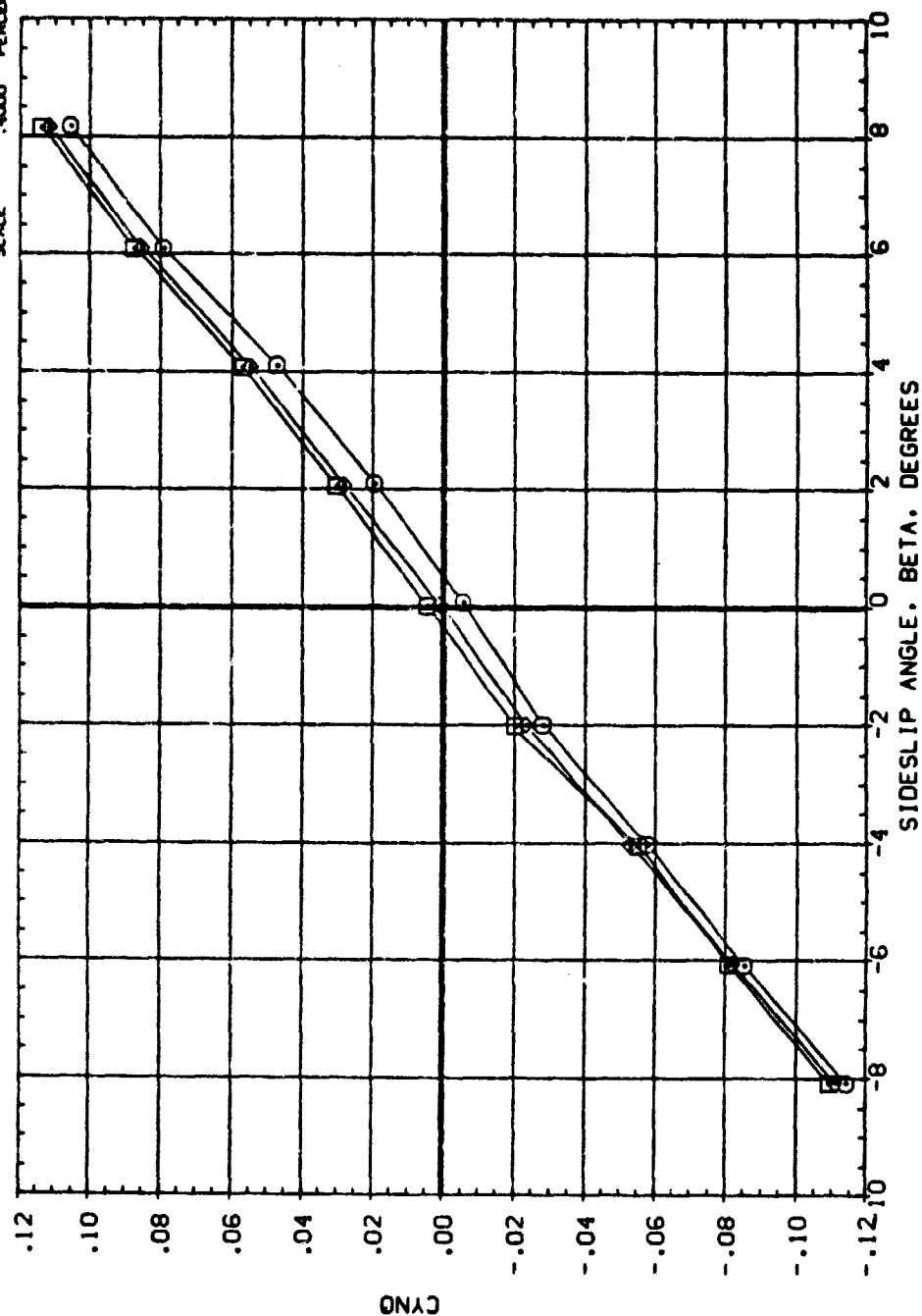
REFERENCE INFORMATION
 REF 5.1980 50. IN
 LREF 5.1612 50. IN
 REF 3.7470 50. IN
 REF 2.7120 50. IN
 TREF .0000 50. IN
 TREF .0000 50. IN
 SCALE .4000 PERCENT



(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) F128. MSFC TVT 656. CONF 16. 02V2E20NPAAT1353
 (FA2811) F128. MSFC TVT 656. CONF 16. 02V2E20NPAAT1353
 (FA2812) F128. MSFC TVT 656. CONF 16. 02V2E20NPAAT1353

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

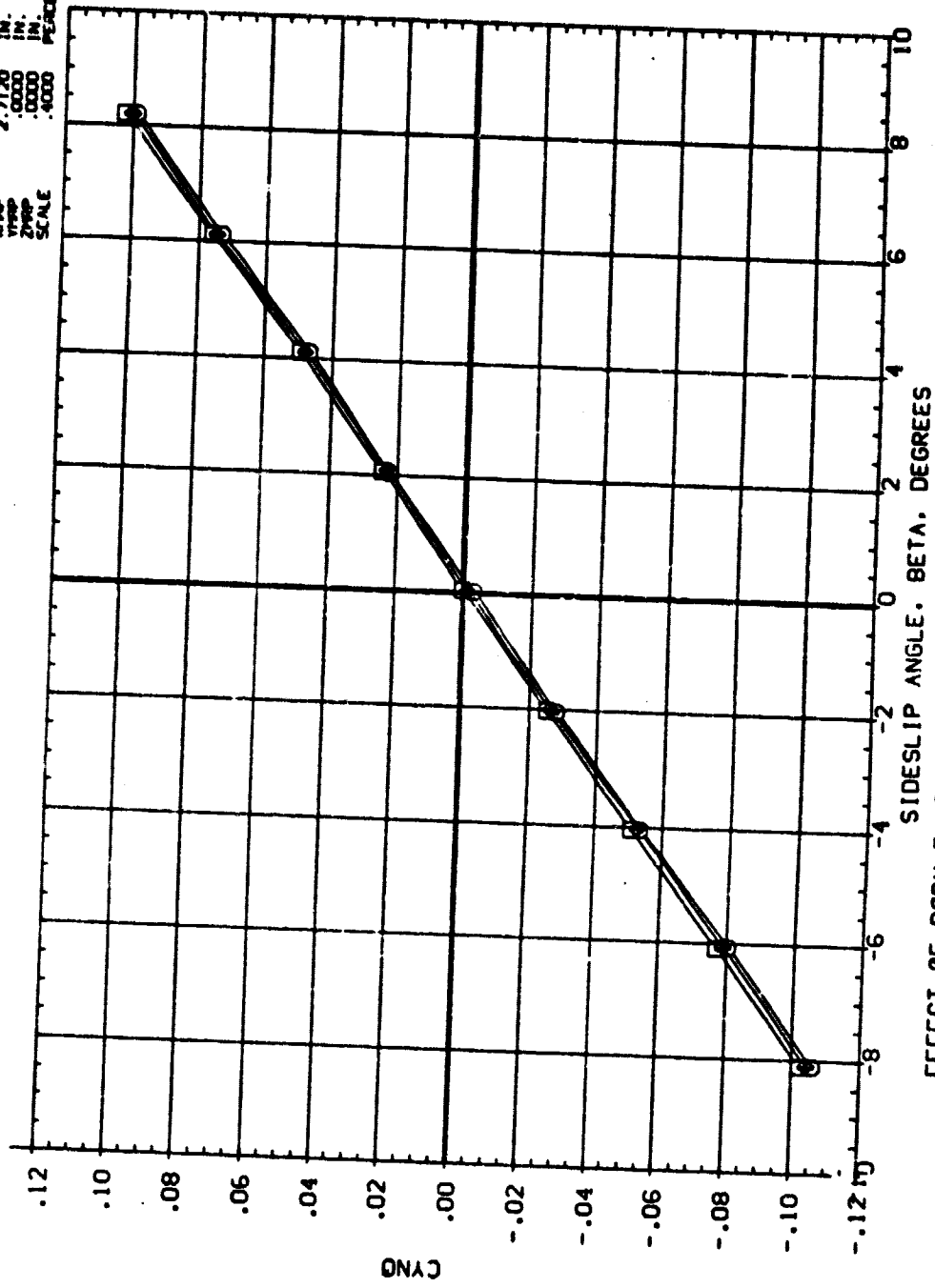


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2809) FA28. HSC. TVT 656. CONF IG. 02VZ2PMPAT133
 (FA2811) FA28. HSC. TVT 656. CONF IG. 02VZ2PMPAT133
 (FA2812) FA28. HSC. TVT 656. CONF IG. 02VZ2PMPAT133

REFERENCE INFORMATION
 SHEET 6. 1880 50. IN.
 LIFT 3. 1612 IN.
 BRKF 2. 7170 IN.
 STAP 2. 7170 IN.
 STAP .0000 IN.
 STAP .0000 IN.
 SCALE 4000 PERCENT

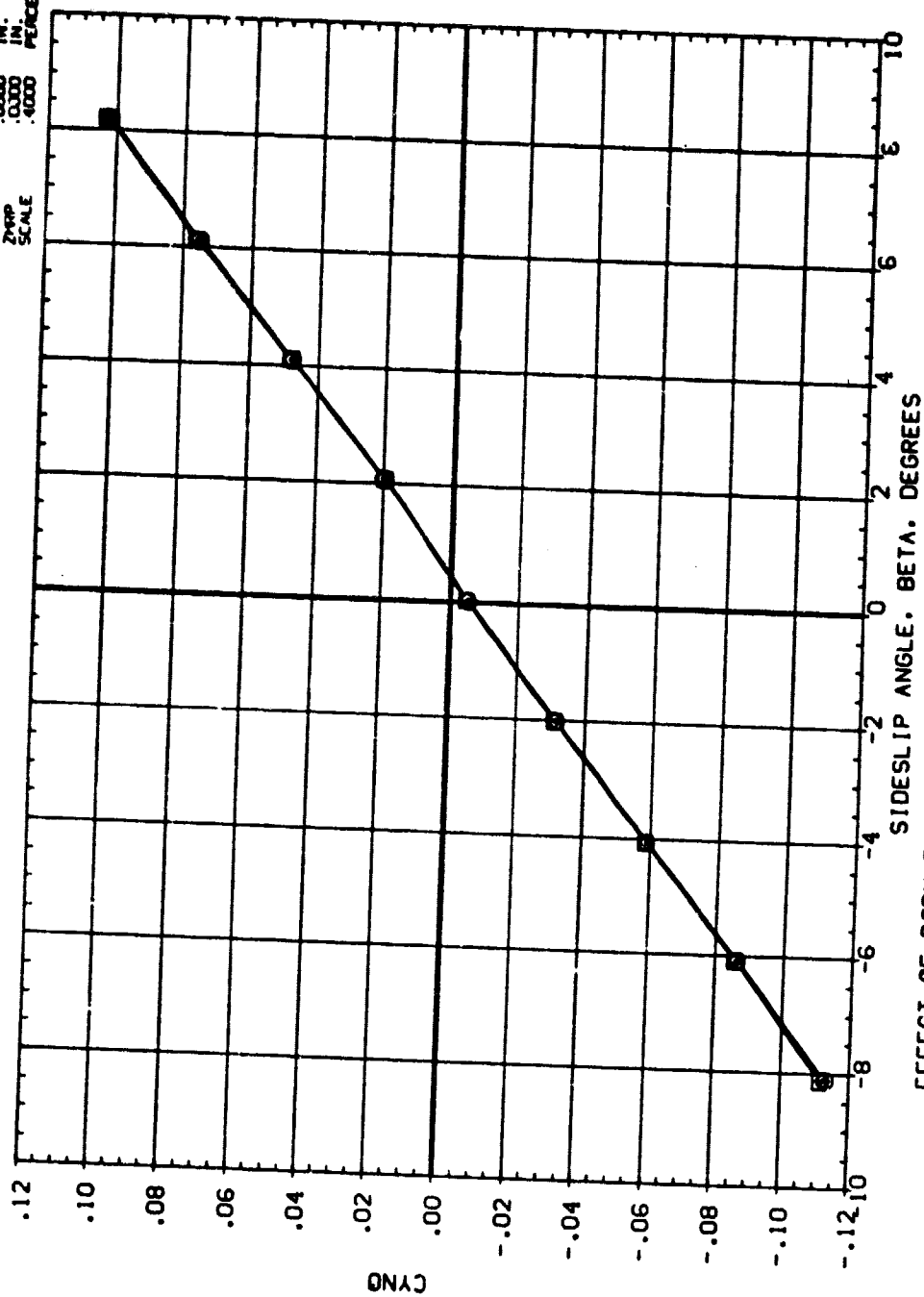


EFFECT OF BODY FLAP

(C)MACH = 1.05

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FA2809) FA28. MSFC TVT 656. CONF 10. 02VZE2PAPAAIT353
 (FA2811) FA28. MSFC TVT 656. CONF 10. 02VZE2PAPAAIT353
 (FA2812) FA28. MSFC TVT 656. CONF 10. 02VZE2PAPAAIT353

REFERENCE INFORMATION
 SREF 6.1260 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XPROP 2.7120 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

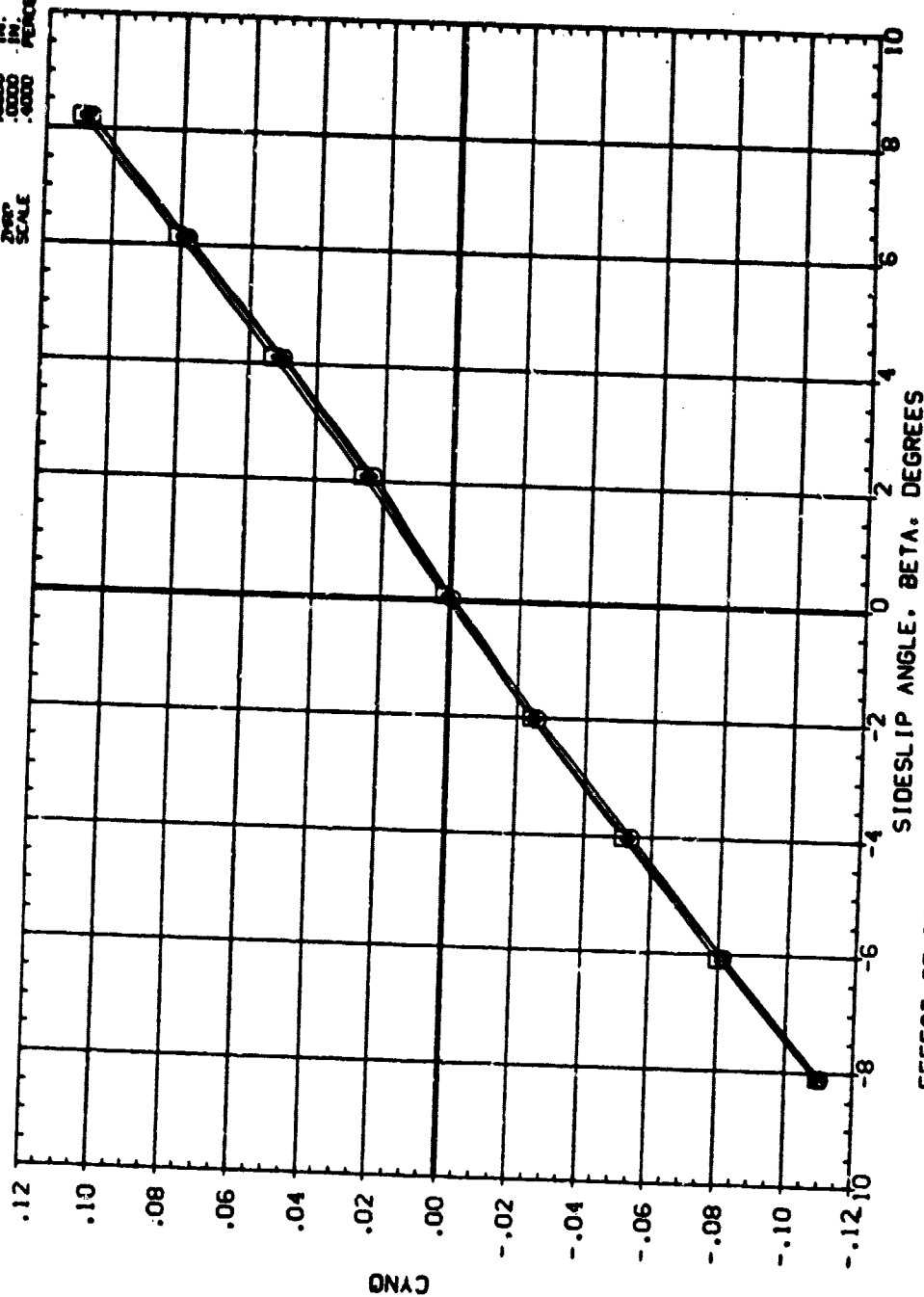


EFFECT OF BODY FLAP

(0.3MACH = 1.10)


DATA SET SYMBOL: 0
 (FA2809) FA28. MSFC TWT 656. CONF 16. ORVZ:RPAAT1753
 (FA2811) FA28. MSFC TWT 656. CONF 16. ORVZ:RPAAT1753
 (FA2812) FA28. MSFC TWT 656. CONF 16. ORVZ:RPAAT1753

REFERENCE INFORMATION
 REF: 6.1280 SQ. IN.
 LIFT: 5.1612 IN.
 DRAG: 3.2470 IN.
 TWRP: 2.7120 IN.
 TWRP: .0000 IN.
 TWRP: .0000 IN.
 SCALE: .0000 PERIOD

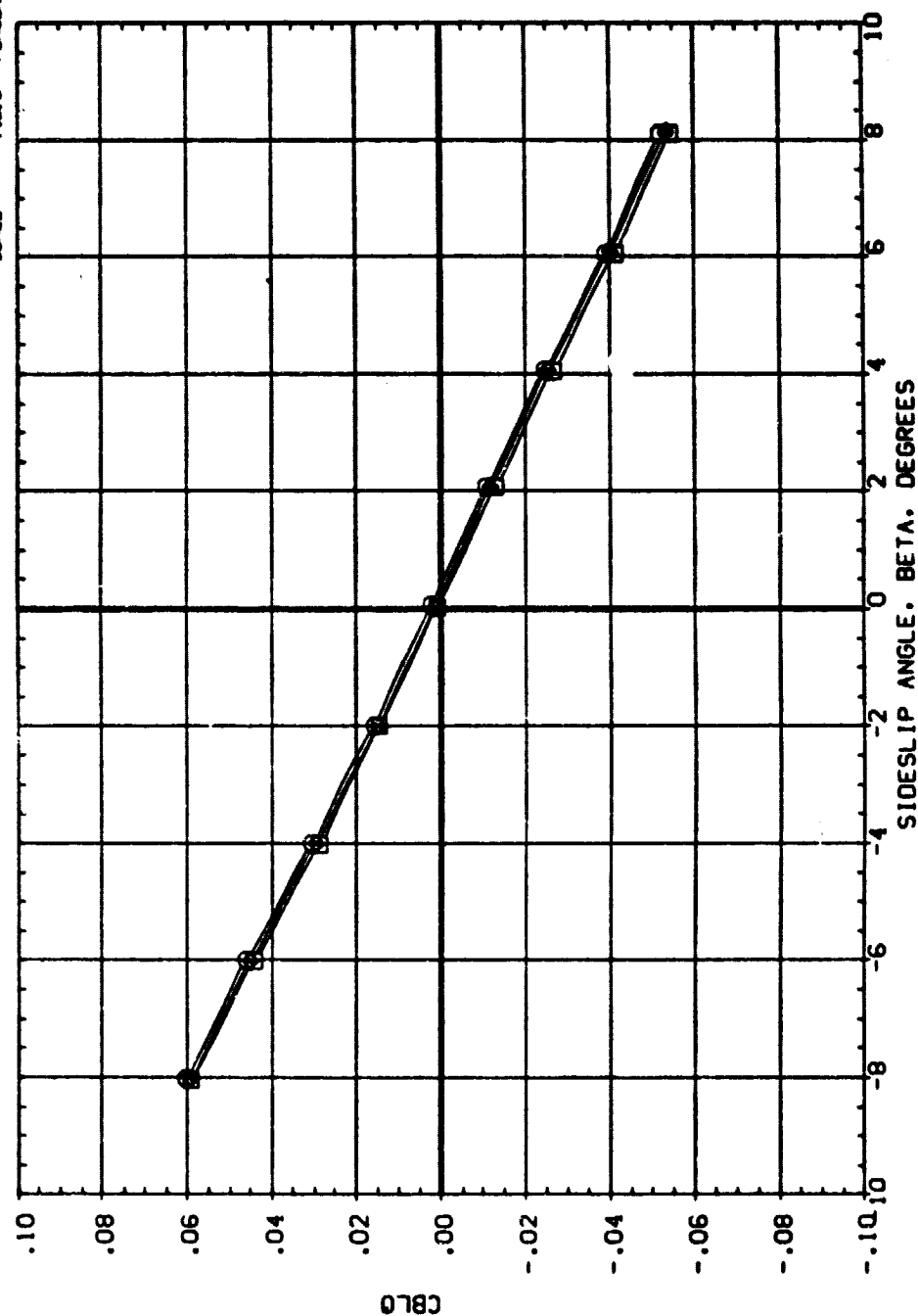


EFFECT OF BODY FLAP

(C)MACH = 1.25

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FA2809) FA28, MSFC TVT 656, CONF 16, QZVZ20PAA11353
 (FA2811) FA28, MSFC TVT 656, CONF 16, QZVZ20PAA11353
 (FA2812) FA28, MSFC TVT 656, CONF 16, QZVZ20PAA11353

REFERENCE INFORMATION:
 SREF 6.170 IN.
 LREF 5.1612 IN.
 BREF 2.7470 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

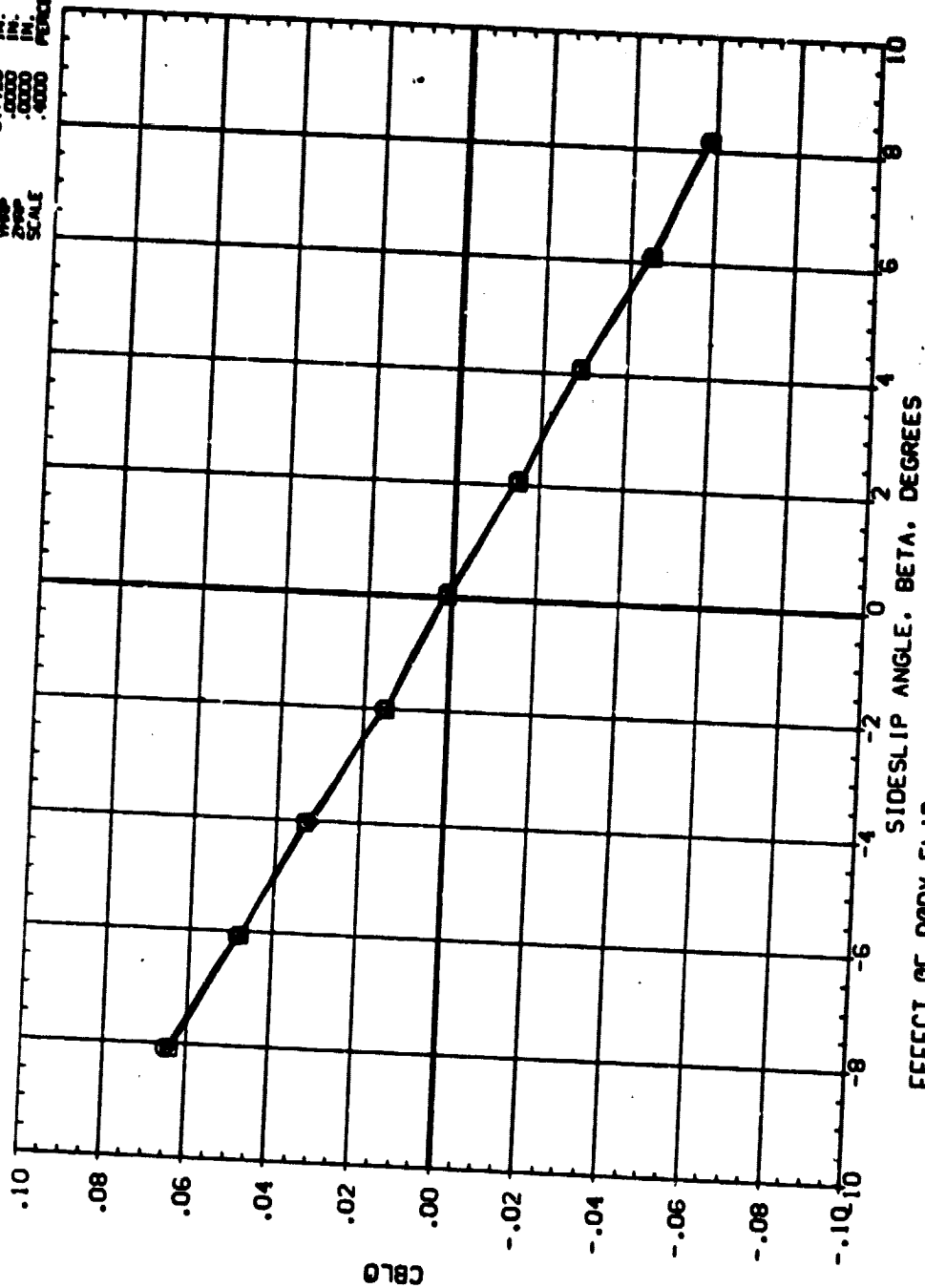


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2009) 8 FA20: MSFC TVT 656. CONF IG. 03VZ2P0A1T133
 (FA2011) 8 FA20: MSFC TVT 656. CONF IG. 03VZ2P0A1T133
 (FA2012) 8 FA20: MSFC TVT 656. CONF IG. 03VZ2P0A1T133

REFERENCE INFORMATION
 SREF 5.1280 90. IN.
 LREF 5.1612 90. IN.
 BREF 3.2470 90. IN.
 WREF 2.7120 90. IN.
 ZREF .0000 90. IN.
 SCALE .0000 FEET/IN.

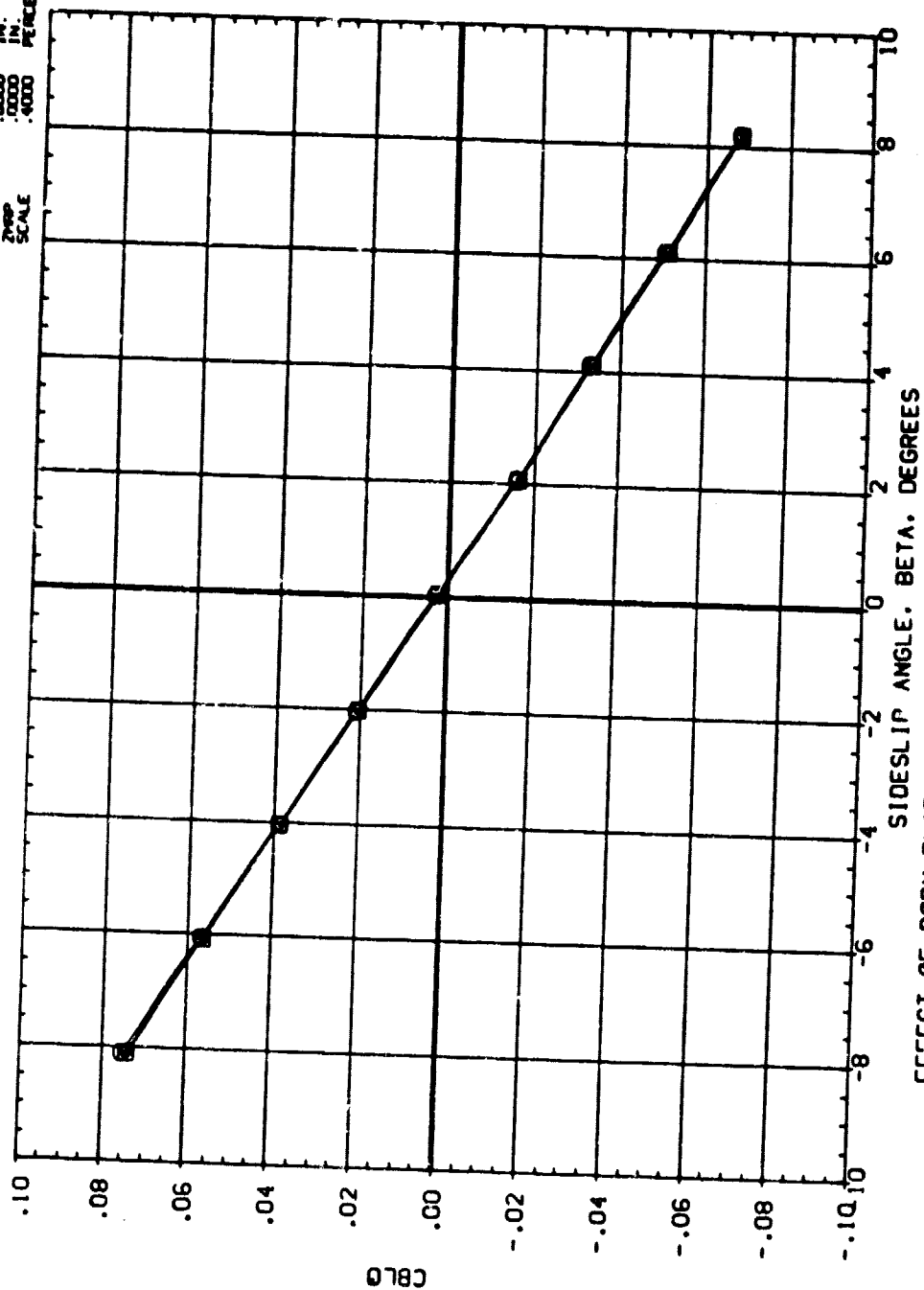


EFFECT OF BODY FLAP

(8)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) FA28. M5FC TWT 656. CDF IG. 00VZRPAPATT253
 (FA2811) FA28. M5FC TWT 656. CDF IG. 00VZRPAPATT253
 (FA2812) FA28. M5FC TWT 656. CDF IG. 00VZRPAPATT253

REFERENCE INFORMATION
 SREF 6.1360 IN. IN.
 LREF 5.1612 IN. IN.
 BREF 2.7470 IN. IN.
 YREF 2.7120 IN. IN.
 YPROP .0000 IN. IN.
 SCALE .0000 PERCENT

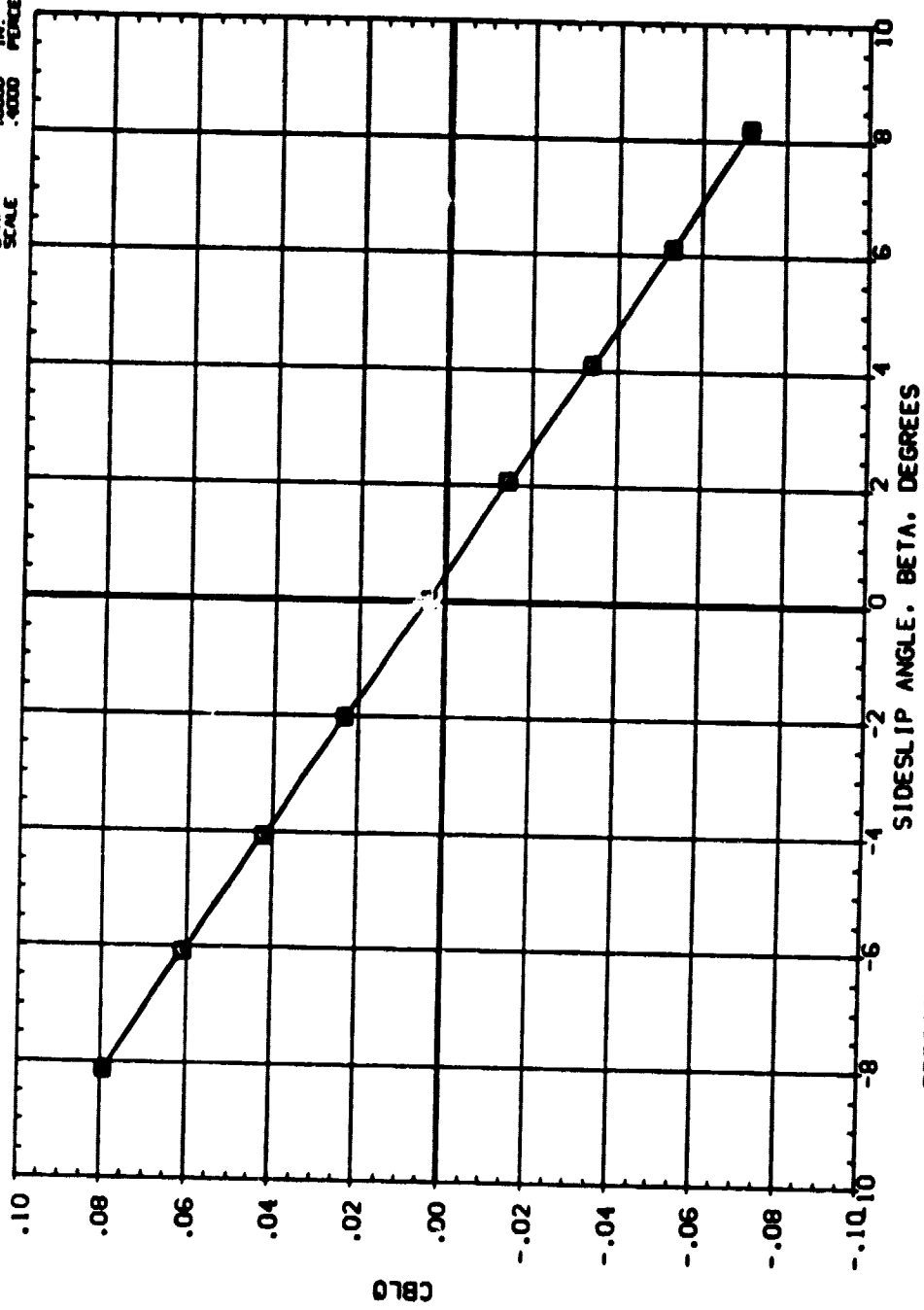


EFFECT OF BODY FLAP

(C)MACH = 1.05

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2809) FA28. MSFC TWT 656. CONF 16. GONZE 2PAPAT1353
 (FA2811) FA28. MSFC TWT 656. CONF 16. GONZE 2PAPAT1353
 (FA2812) FA28. MSFC TWT 656. CONF 16. GONZE 2PAPAT1353

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1412 IN.
 MREF 3.7478 IN.
 WREF 2.7128 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



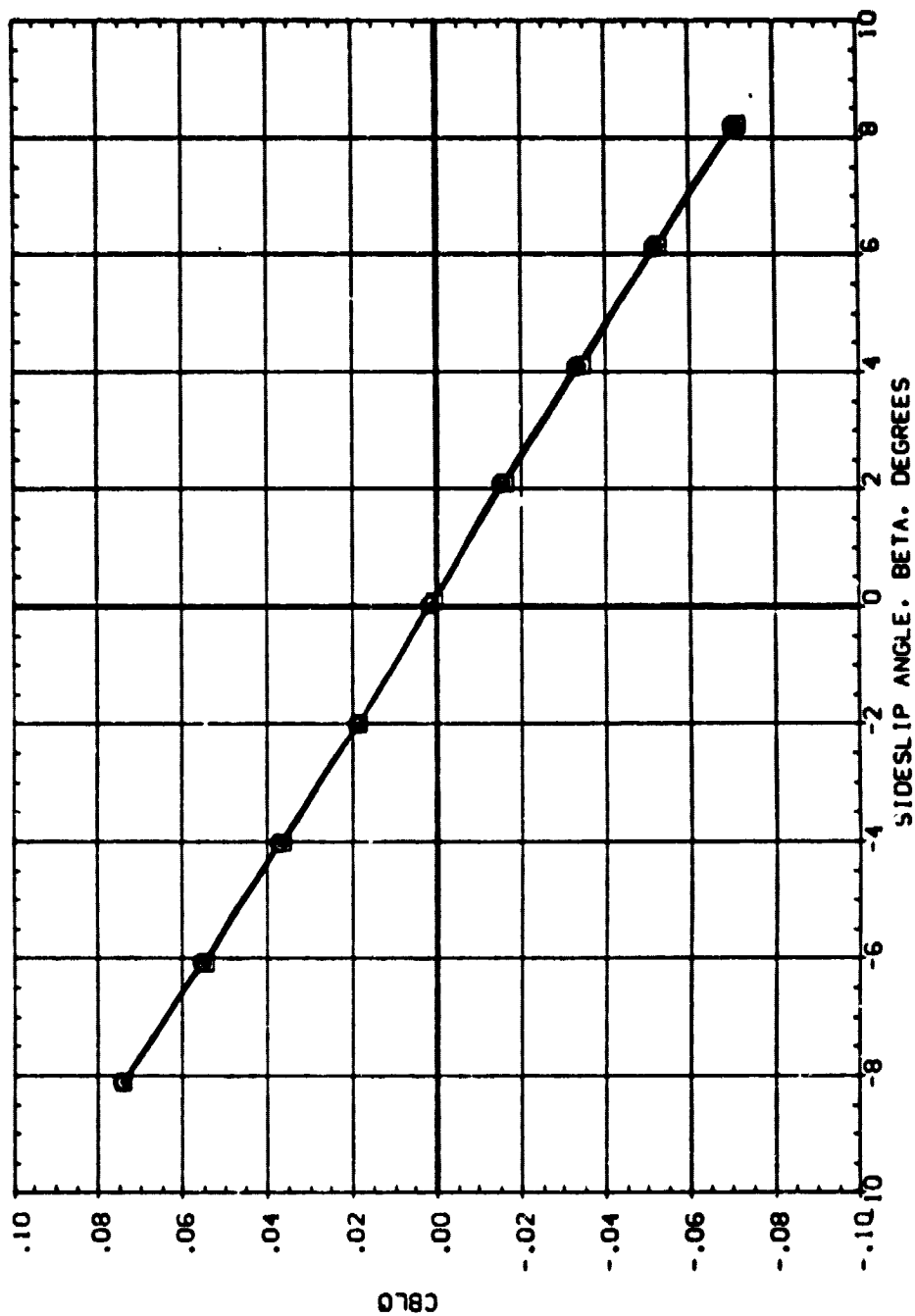
EFFECT OF BODY FLAP

(O)MACH = 1.10

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DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) 0 FA28: MSEC TUT 656: COG IG. 02VZ23MATT1353
 (FA2811) 0 FA28: MSEC TUT 656: COG IG. 02VZ23MATT1353
 (FA2812) 0 FA28: MSEC TUT 656: COG IG. 02VZ23MATT1353

REFERENCE INFORMATION
 SWEET 6.1580 IN.
 LURE 9.1612 IN.
 SWEET 3.7470 IN.
 SWEET 2.7120 IN.
 WWP .0000 IN.
 ZWP .0000 IN.
 SCALE .4000 PERCENT

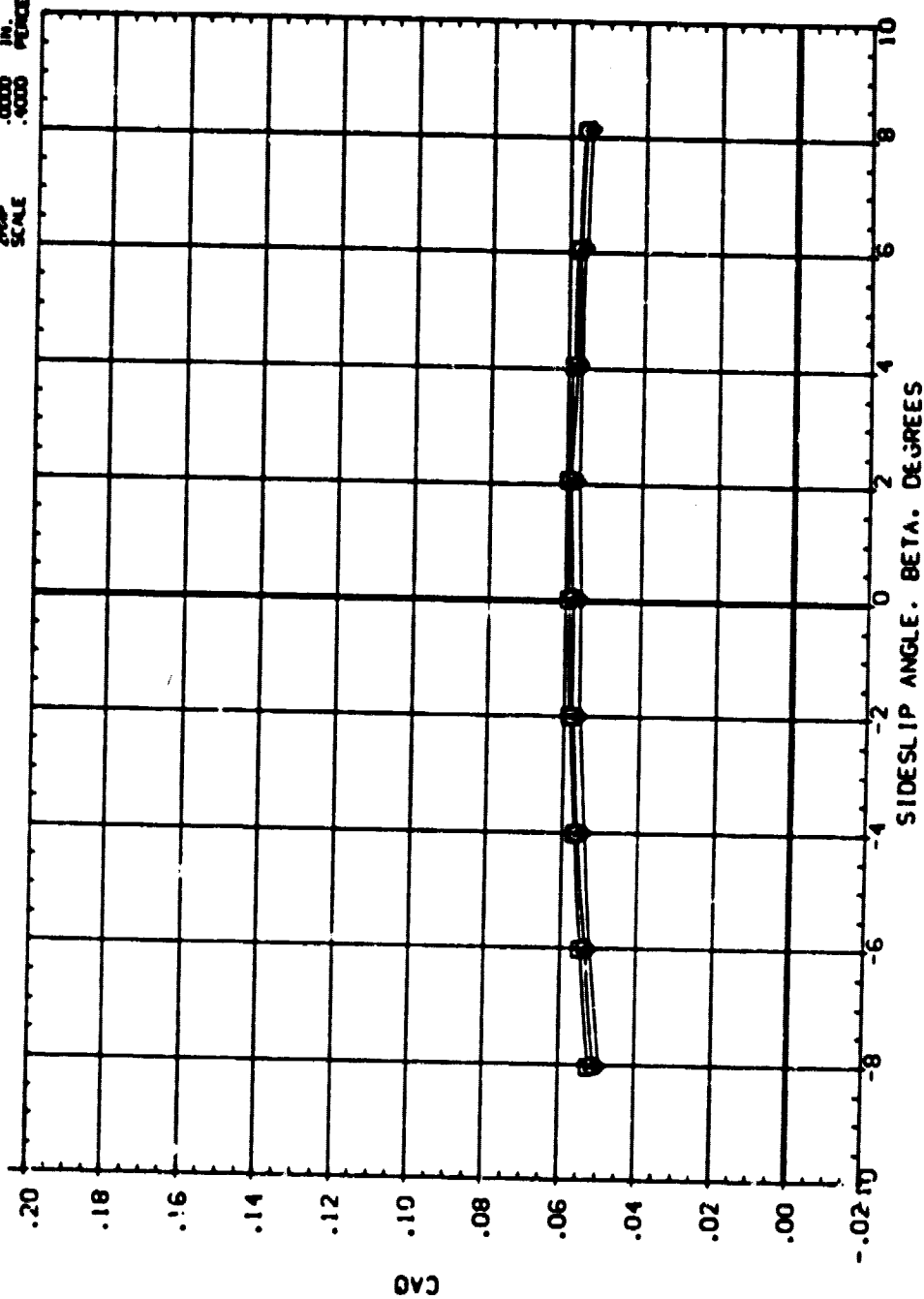


EFFECT OF BODY FLAP

(E)MACH = 1.25

DATA SET SYMBOL: 8
 (FA3021) CONFIGURATION DESCRIPTION: ONZE300A11233
 (FA3022) FA30: M5C 101 656: C0616: ONZE300A11233
 (FA3023) FA30: M5C 101 656: C0616: ONZE300A11233
 (FA3024) FA30: M5C 101 656: C0616: ONZE300A11233

GEOMETRY INFORMATION
 REF: 8.1980 IN.
 LIFT: 3.1612 IN.
 DRAG: 2.7470 IN.
 YAW: 2.7120 IN.
 ROLL: 2.0000 IN.
 SCALE: .0000 PERCENT

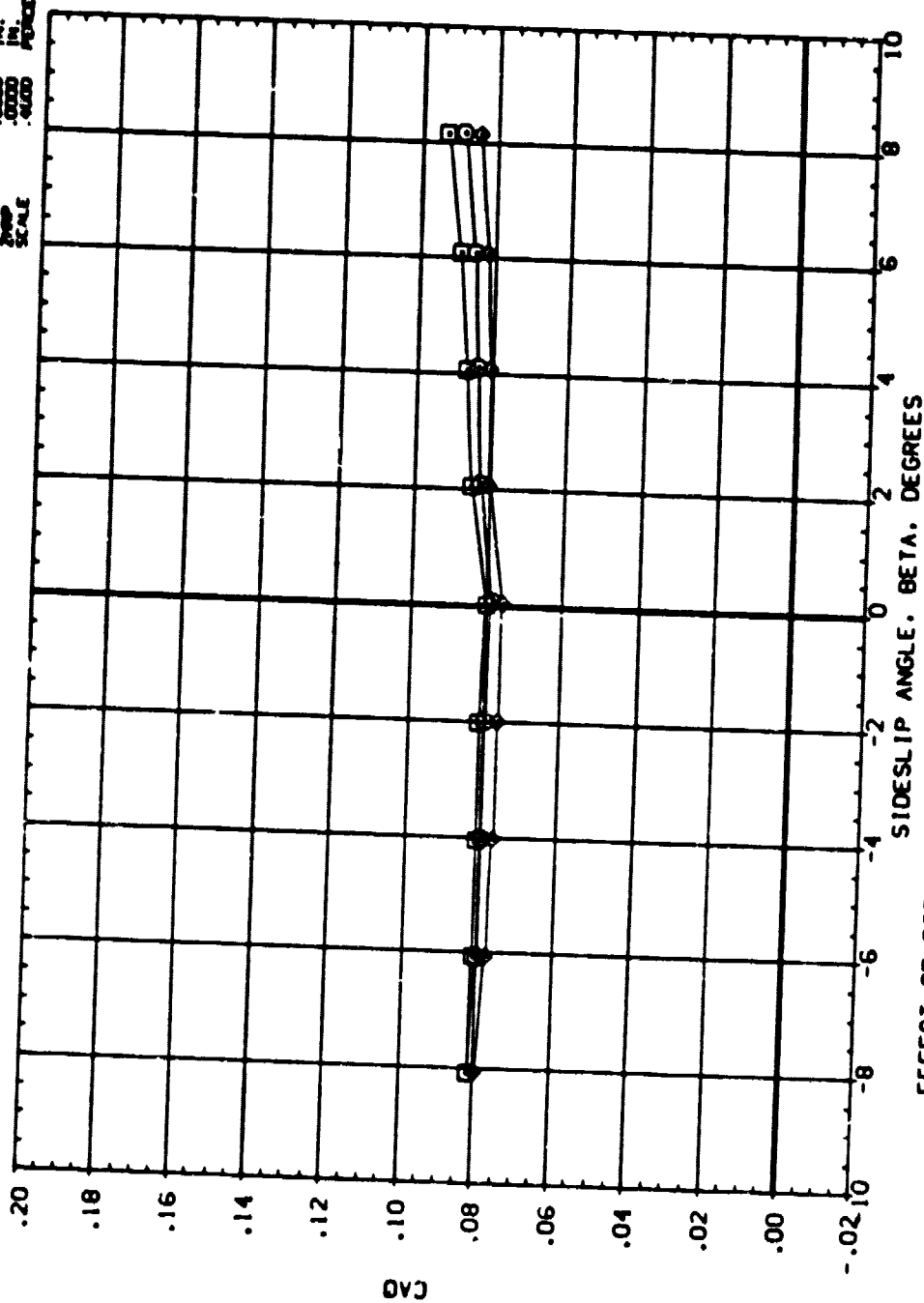


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FAB07) 0 FAB0. M07C 107 G55. COF IG. COF IG. COF IG. COF IG.
 (FAB11) 0 FAB0. M07C 107 G55. COF IG. COF IG. COF IG. COF IG.
 (FAB12) 0 FAB0. M07C 107 G55. COF IG. COF IG. COF IG. COF IG.

REFERENCE INFORMATION
 REF 6.1500 IN.
 LIFT 3.1612 IN.
 DRAG 3.7470 IN.
 YAW 2.7120 IN.
 ROLL .0000 IN.
 SCALE .0000 IN.
 FORCE IN.

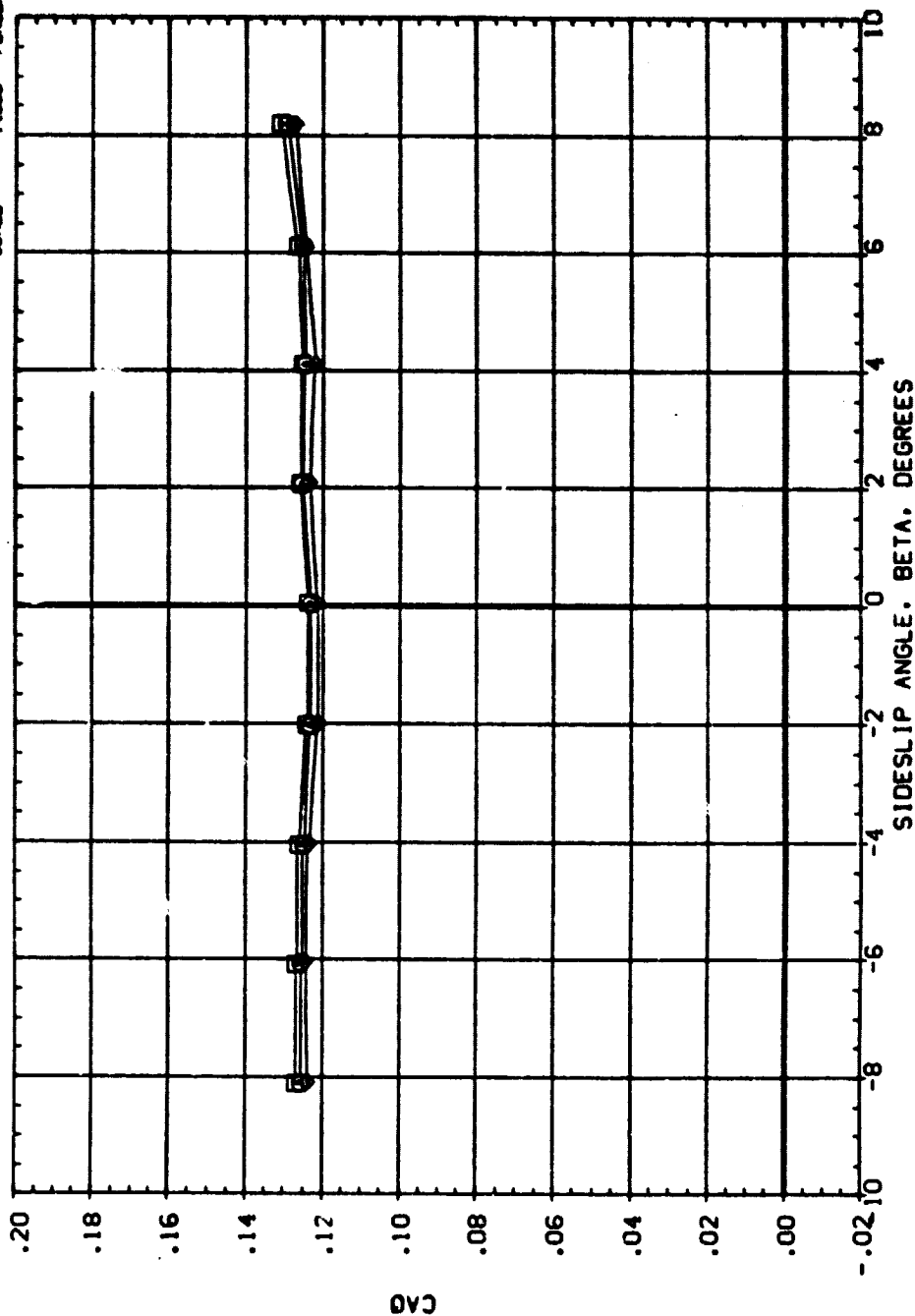


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL: (FA2809) (FA2811) (FA2812)
 CONFIGURATION DESCRIPTION: FA28: MSFC TUT 656: CONF 16: (FA2809) (FA2811) (FA2812)
 FA28: MSFC TUT 656: CONF 16: (FA2809) (FA2811) (FA2812)
 FA28: MSFC TUT 656: CONF 16: (FA2809) (FA2811) (FA2812)

REFERENCE INFORMATION
 REF: 6.1500 IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 XREF: 2.7120 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT



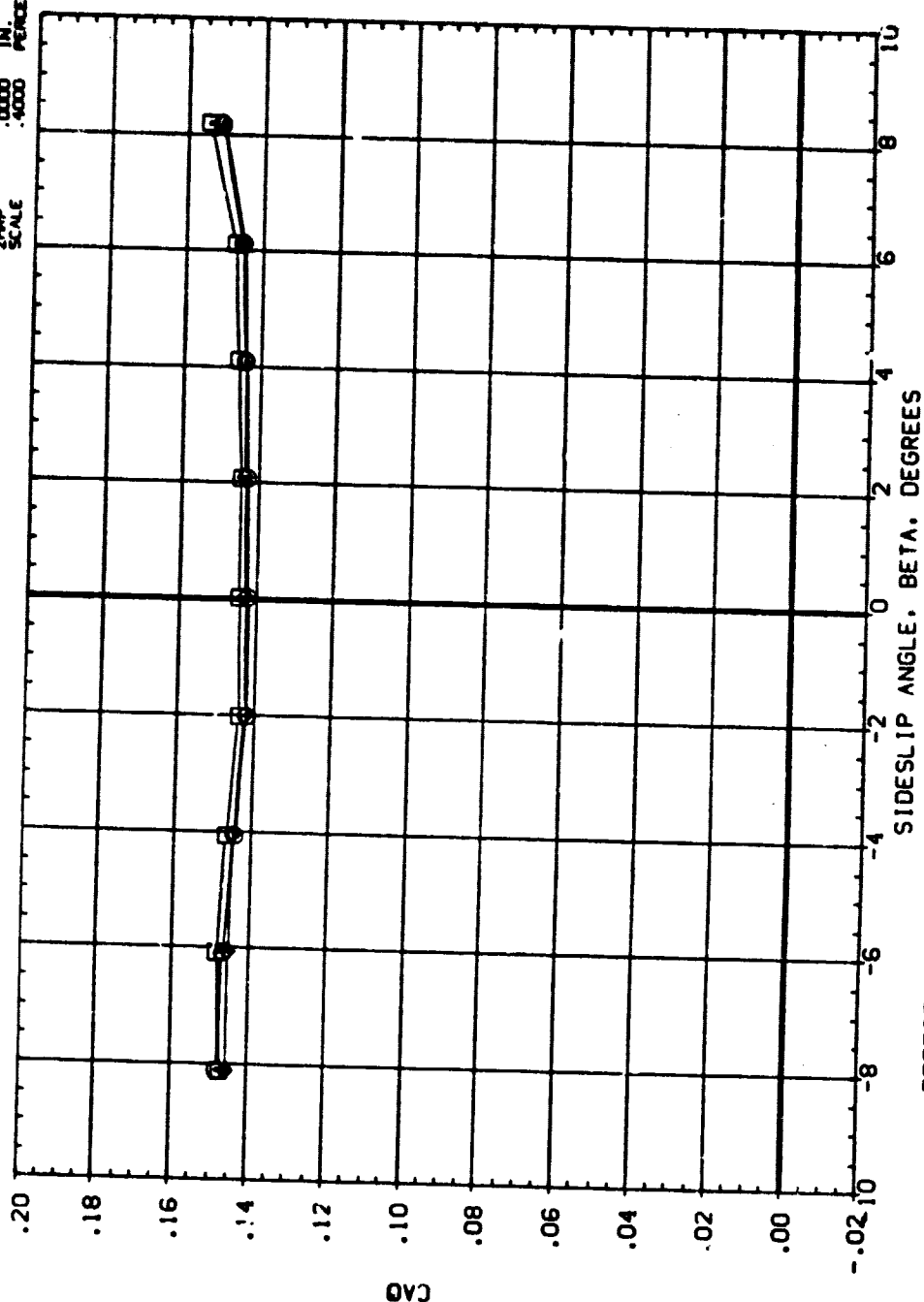
EFFECT OF BODY FLAP

(C)MACH = 1.05

DATA SET SYMBOL. CONFIGURATION DESCRIPTION

(FA2809) FA28. MSFC TWT 826. CONF 1G. QDZ22PAPAATT353
 (FA2811) FA28. MSFC TWT 826. CONF 1G. QDZ22PAPAATT353
 (FA2812) FA28. MSFC TWT 826. CONF 1G. QDZ22PAPAATT353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 2.7470 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF BODY FLAP

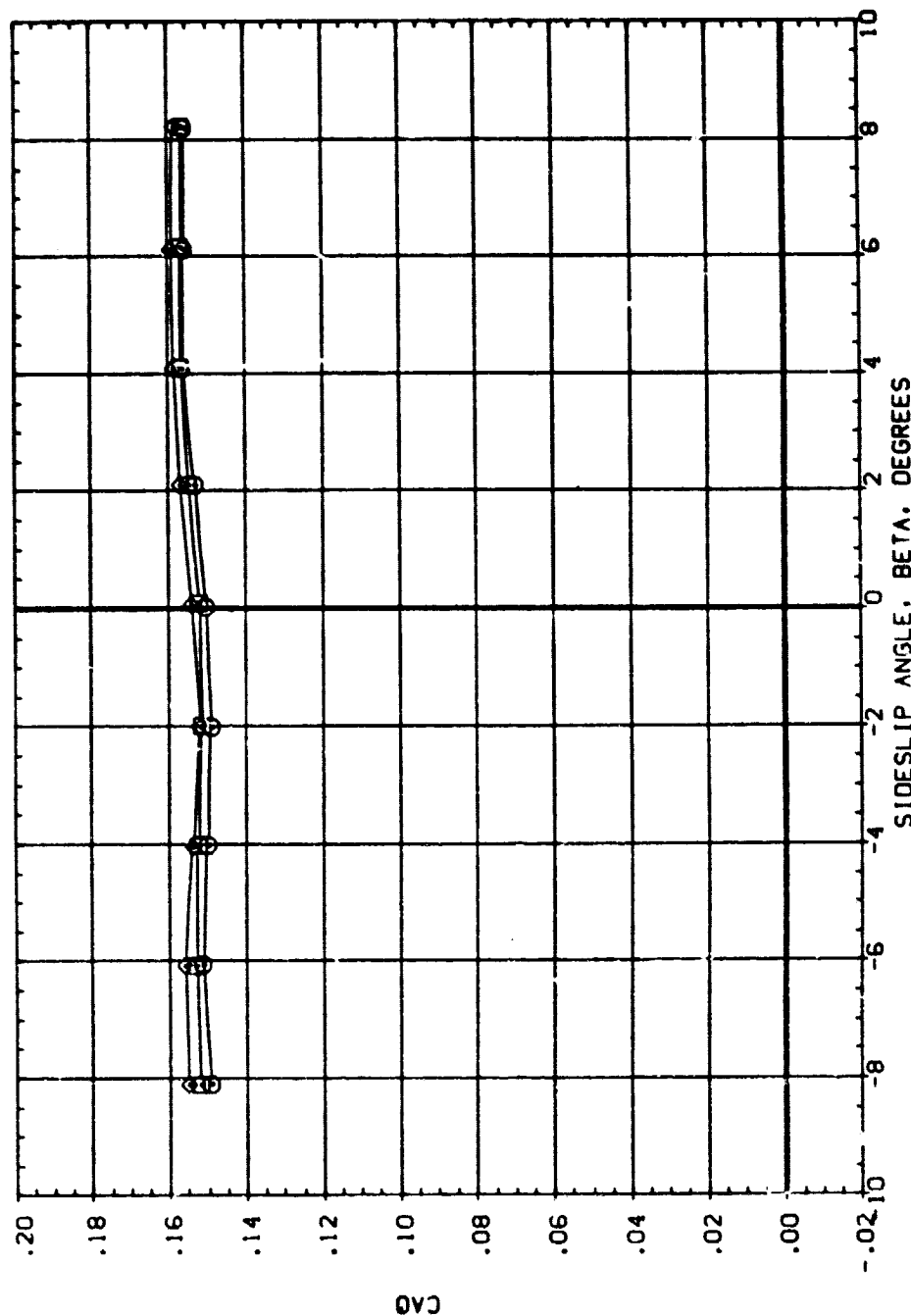
(D)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(FA2809)	FA28. MSC INT 656. CONF IG.
(FA2811)	FA28. MSC INT 656. CONF IG.
(FA2812)	FA28. MSC INT 656. CONF IG.

REFERENCE INFORMATION

REF	IN	SO	IN
REF	6.1580	50	IN
REF	5.1612	IN	IN
REF	2.7470	IN	IN
REF	2.7120	IN	IN
REF	.0000	IN	IN
REF	.0000	IN	IN
REF	.4000	PERCENT	

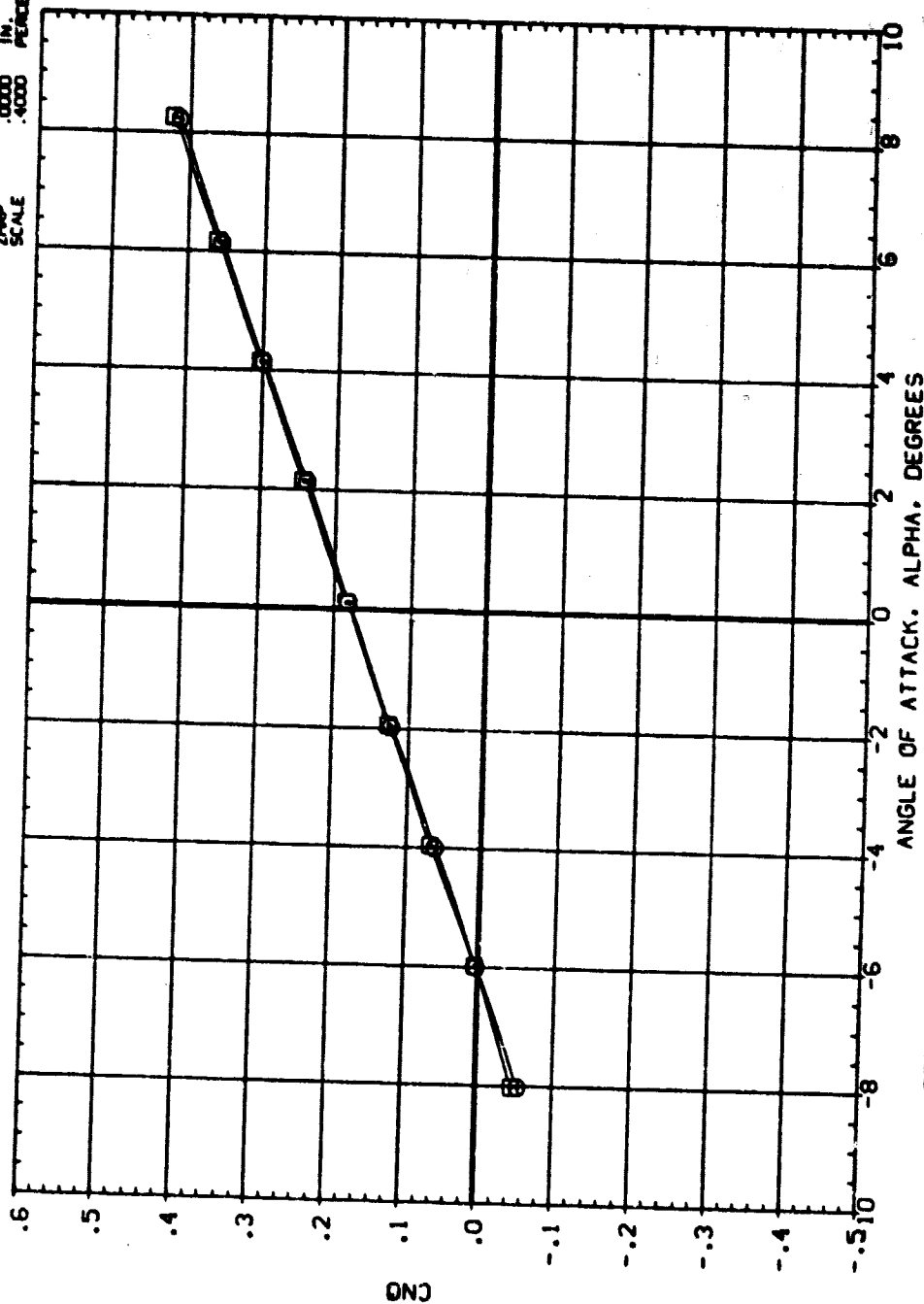


EFFECT OF BODY FLAP

(E)MACH = 1.25

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2008) □ FA20. MSFC TWT 656. CONF.IG. SCHEZEMPAAT123
 (FA2014) □ FA20. MSFC TWT 656. CONF.IG. SCHEZEMPAAT133

REFERENCE INFORMATION
 SREF 5.1880 50. IN.
 LREF 3.1612 IN.
 BREF 3.7170 IN.
 XREF 2.7170 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 FEET

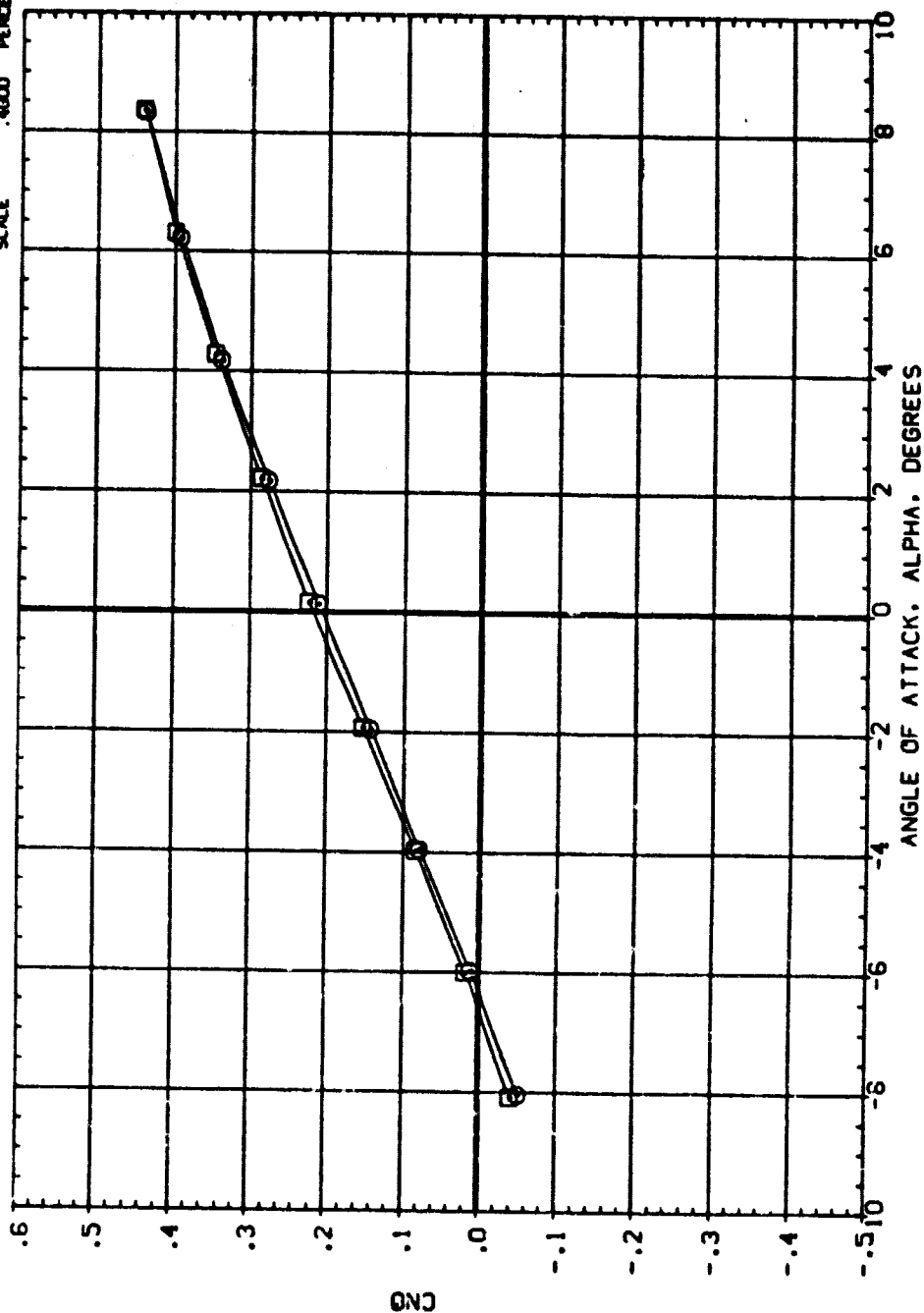


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

CONF	IGRATION	DESCRIPTION
FA28.	MSFC	TVI 656. CONF 1G. 02N2E3PAPAA11353
FA28.	MSFC	TVI 656. CONF 1G. 02N2E3PAPAA11353

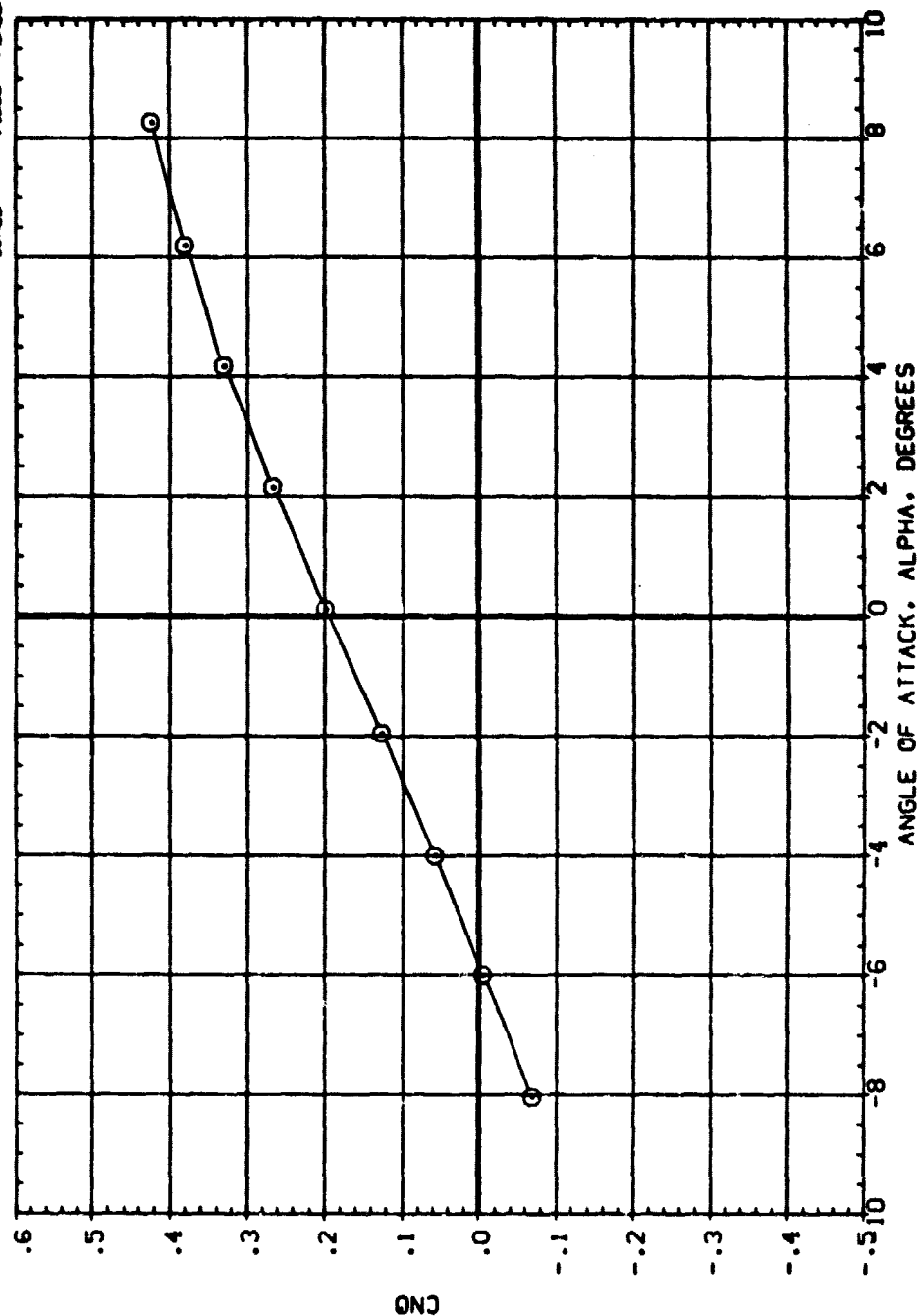
REFERENCE INFORMATION	
SREF	6.1980 SO. IN
LREF	5.1612 IN.
GRF	3.7470 IN.
DRP	2.7120 IN.
VRP	.0000 IN.
VRP	.0000 IN.
SCALE	.4800 PERCH



(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2808) □ FA28. MSFC TWT 855. CONF IG. 00V2E2PAPATT353
 (FA2814) □ DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

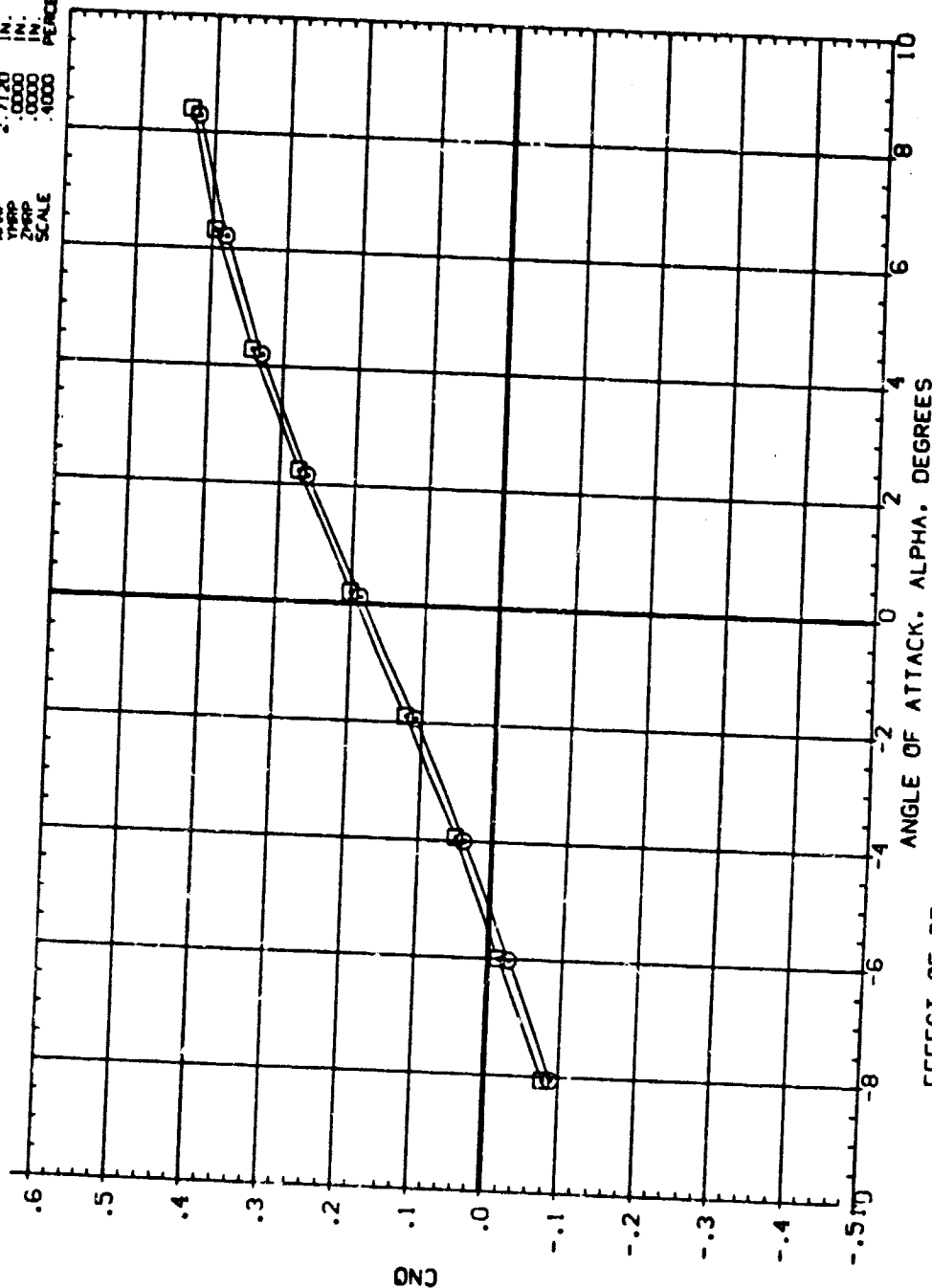


EFFECT OF REYNOLDS NUMBER

(C)MACH = .95


DATA SET SYMBOL: 8
 (FA2808) (FA2814)
 CONFIGURATION DESCRIPTION:
 FA28: MSC TVT 656: CONFIG. 02VZ20PAA1133
 FA28: MSC TVT 656: CONFIG. 02VZ20PAA1133

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

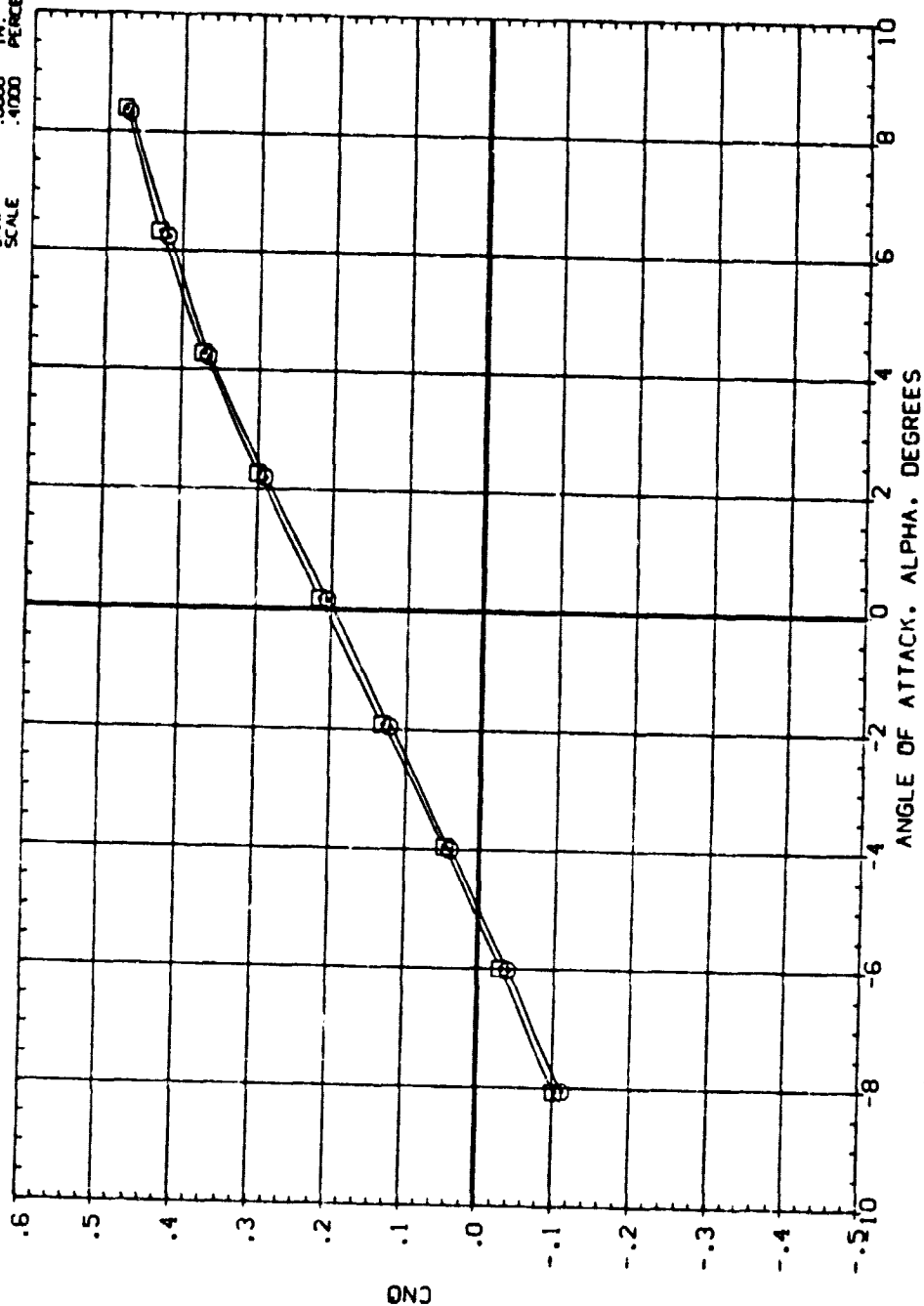


EFFECT OF REYNOLDS NUMBER

(D)MACH = 1.05

DATA SET SYMBOL: (FA2808) (FA2814)  CONFIGURATION DESCRIPTION: FA28, MSFC TNT 656, CONF IG: 03VZEPNPAIT1353 FA28, MSFC TNT 656, CONF IG: 03VZEPNPAIT1353

REFERENCE INFORMATION
SREF 5.1980 SQ. IN.
LREF 5.1612 IN.
BREF 3.7470 IN.
XMRP 2.7120 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .4000 PERCENT

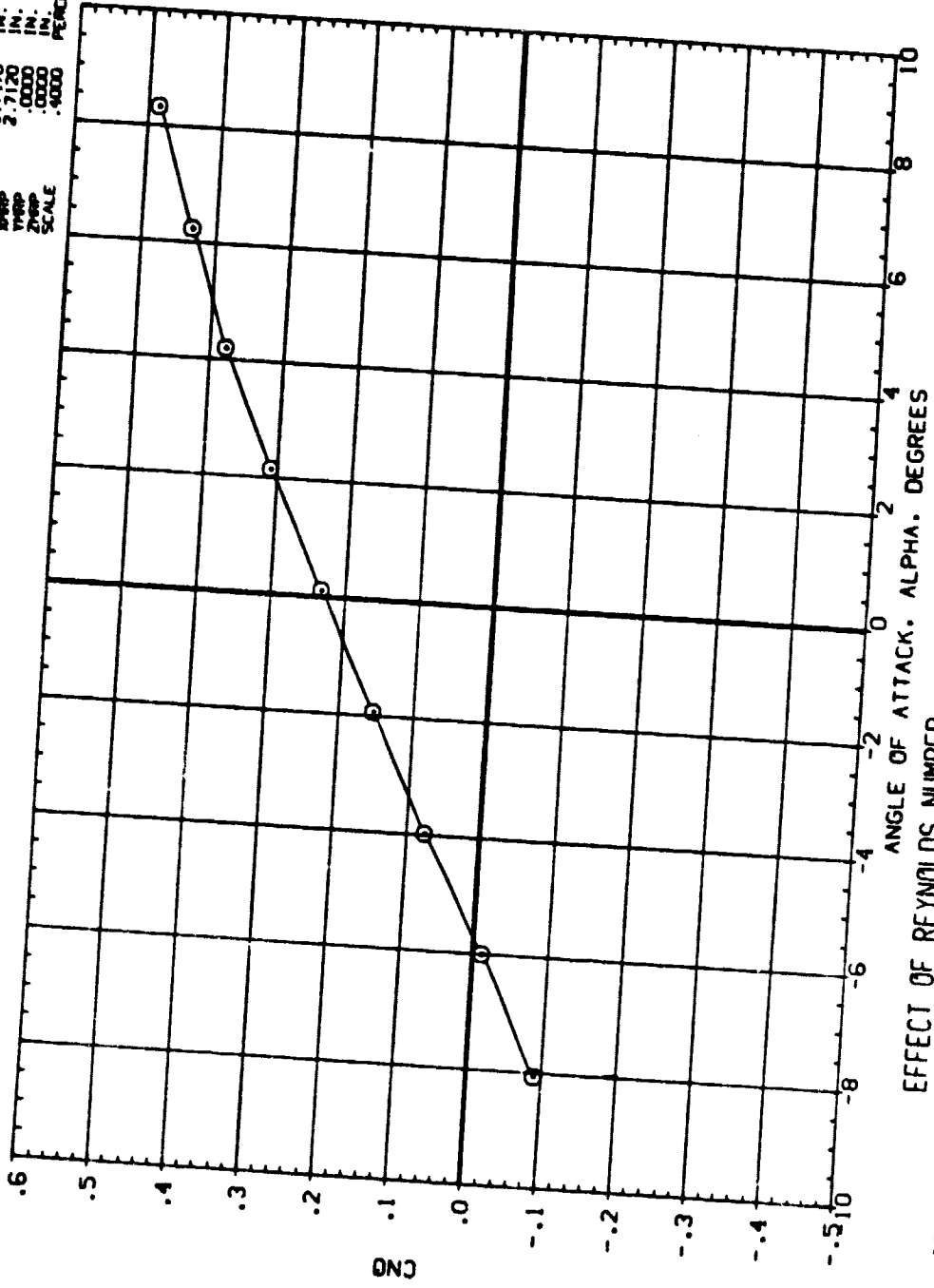


EFFECT OF REYNOLDS NUMBER

(C)MACH = 1.10

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28, MSFC TWT 656, CONFIG. 02V2E2P4PA1T1353
 (FA2809) (FA2814)
 DATA NOT AVAILABLE

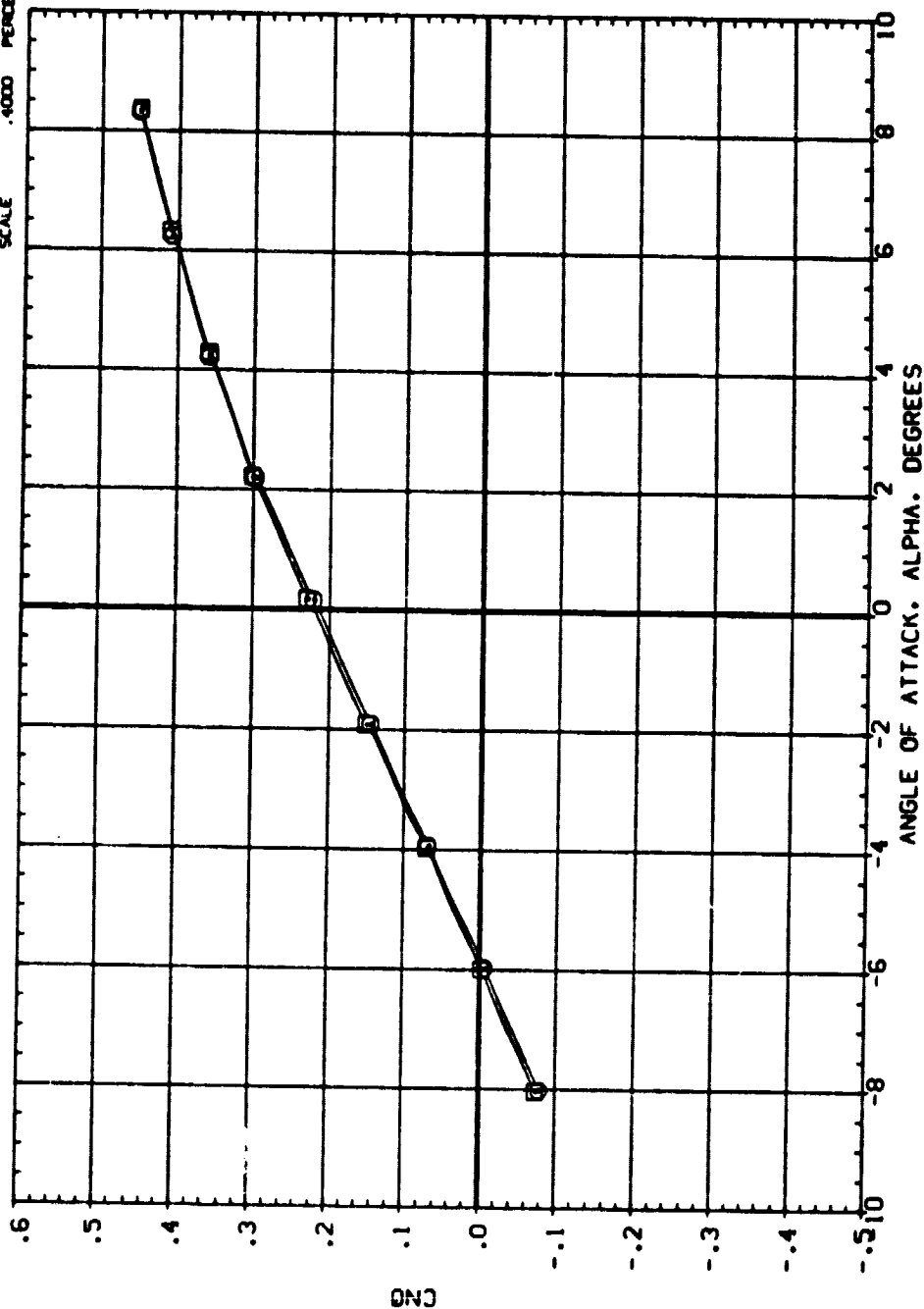
REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7476 IN.
 APPP 2.7120 IN.
 TAPP .0000 IN.
 ZAPP .0000 IN.
 SCALE .0000 PERCENT



EFFECT OF REYNOLDS NUMBER
 (F)MACH = 1.15

DATA SET SYMBOL: **8** CONFIGURATION DESCRIPTION:
 (FA2808) FA28. MSFC TVT 656. CONF IG. 02VZ28P0A11353
 (FA2814) FA28. MSFC TVT 656. CONF IG. 02VZ28P0A11353

REFERENCE INFORMATION:
 SREF 6.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

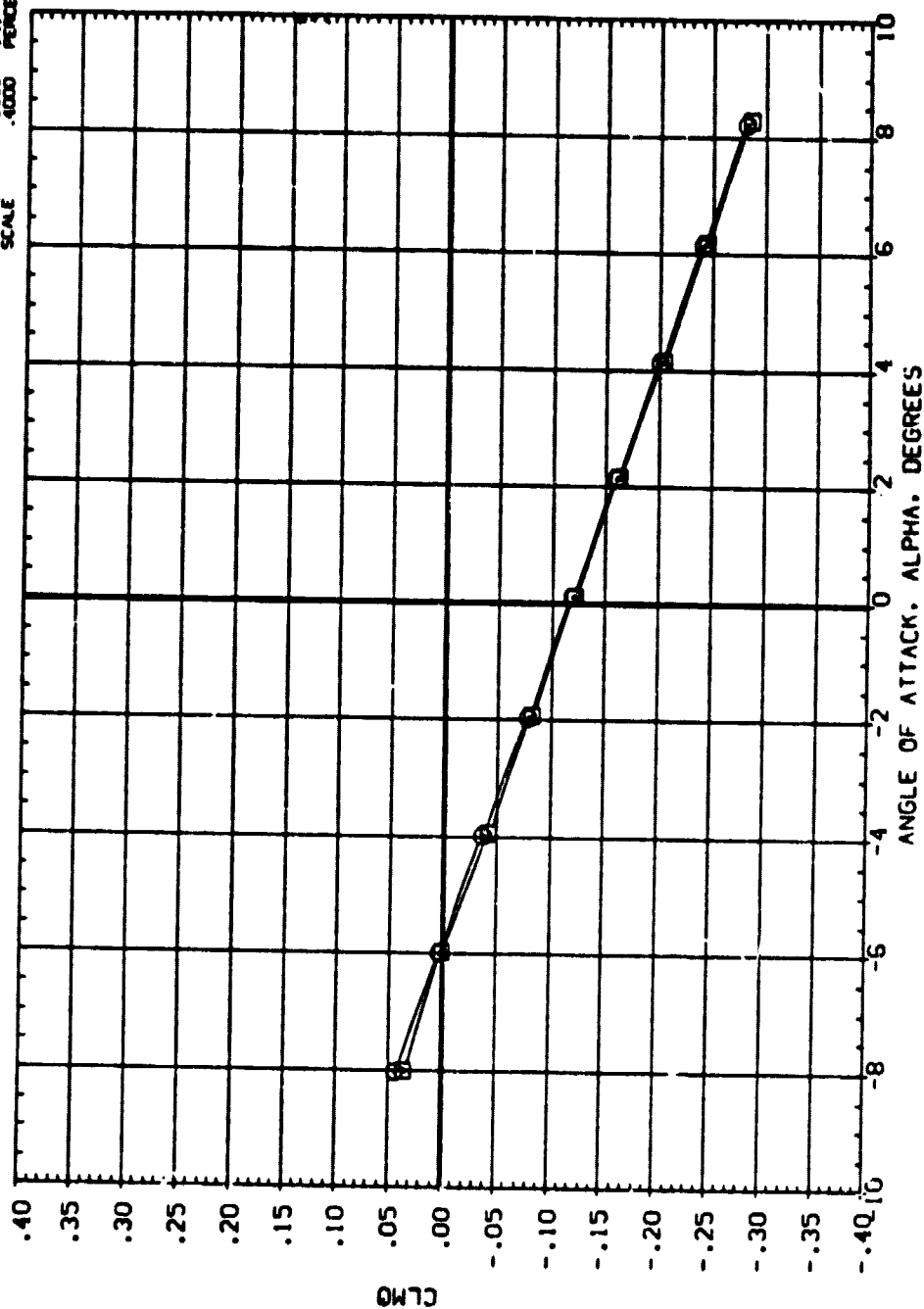


EFFECT OF REYNOLDS NUMBER

(G)MACH = 1.25

DATA SET SYMBOL: 8
 (FA2814)
 CONFIGURATION DESCRIPTION:
 FA28. MSFC INT 656. CONFIG. 02VZ2P0P0A11353
 FA28. MSFC INT 656. CONFIG. 02VZ2P0P0A11353

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 MREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

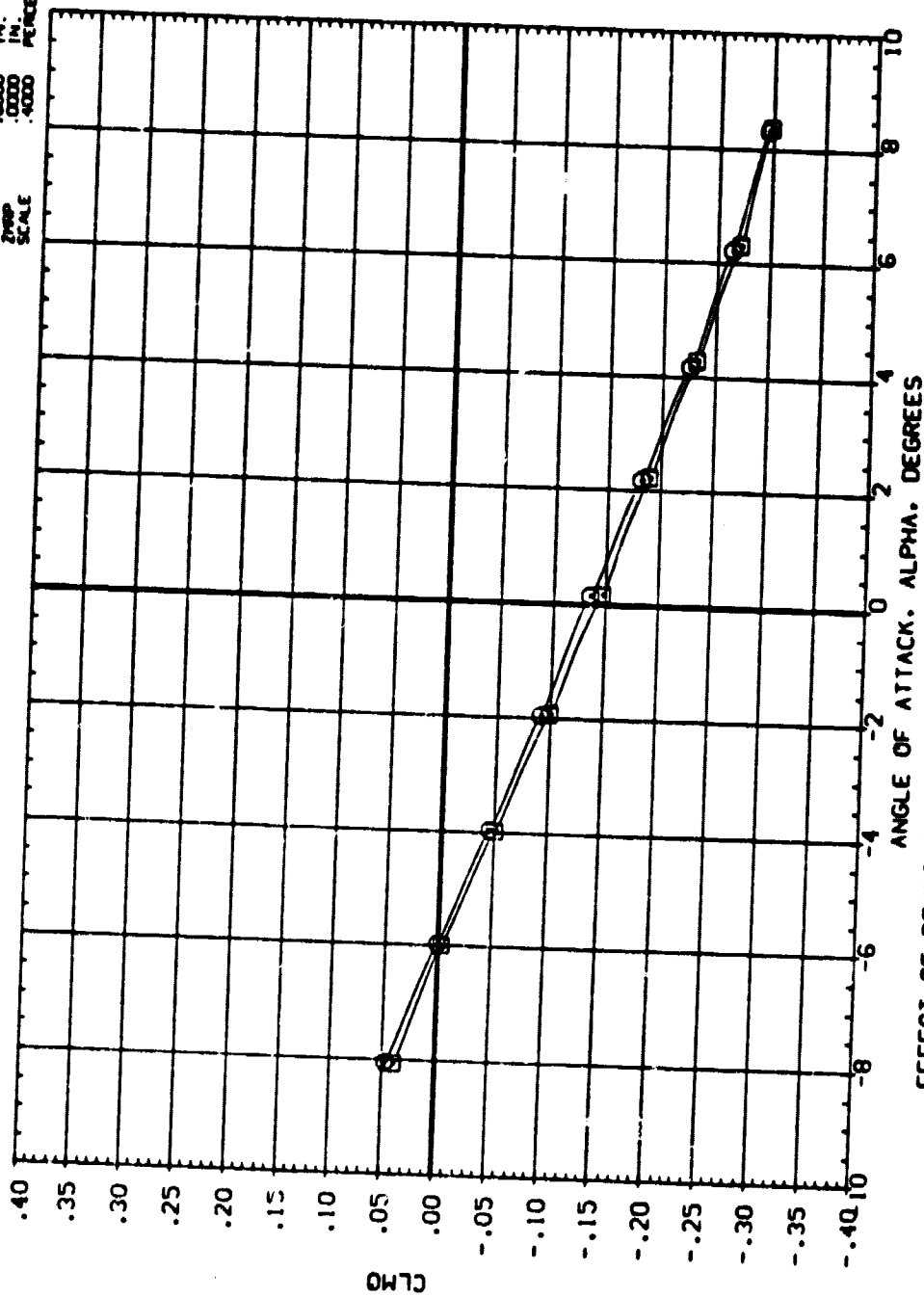


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

DATA SET SYMBOL: FA28. MSFC TWT 656. CONF 16. GENZEPMAIT753
 (FA2814) ☐ FA28. MSFC TWT 656. CONF 16. GENZEPMAIT753

REFERENCE INFORMATION
 REF 6.1960 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 SCALE .4000 PERCENT

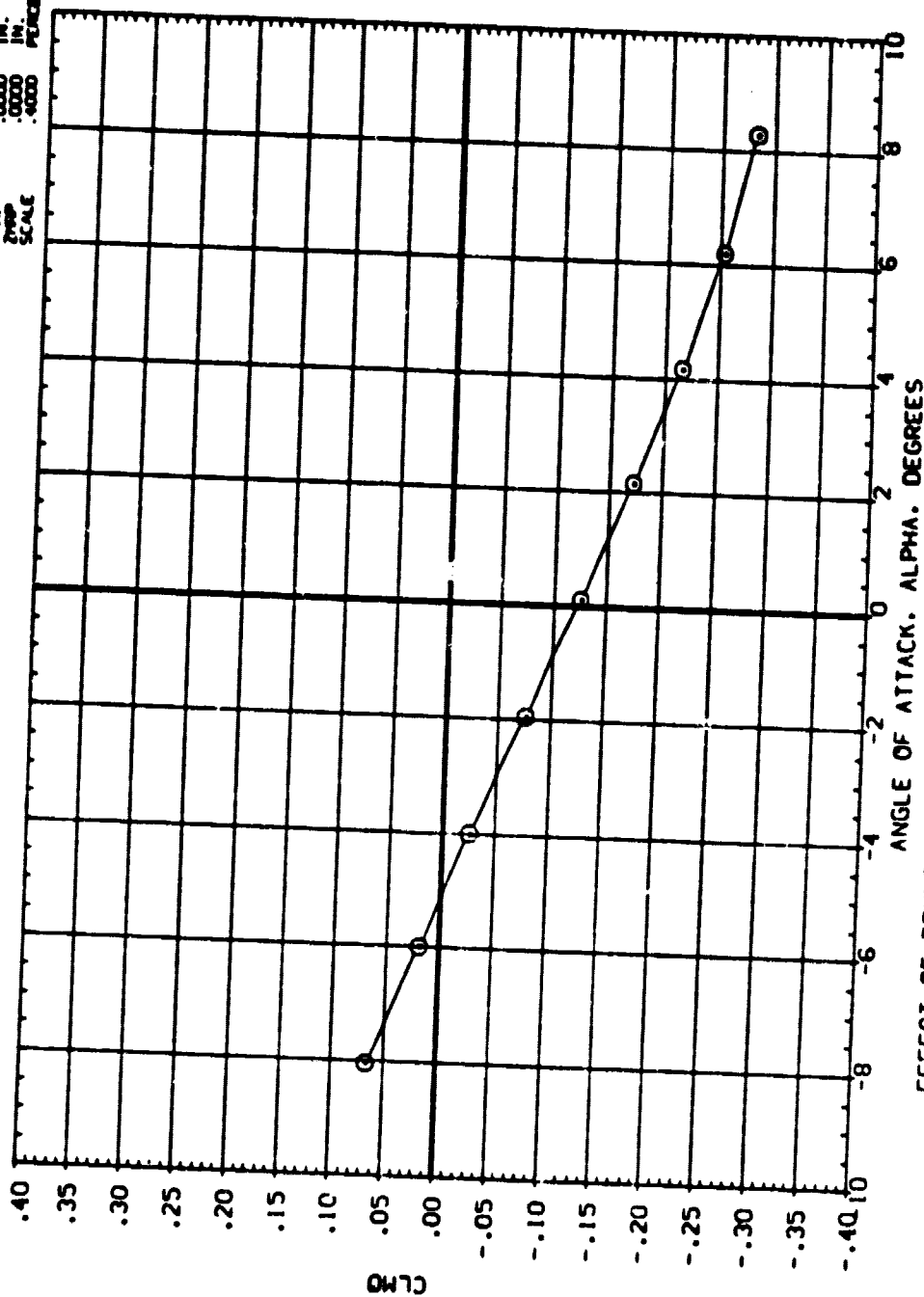


EFFECT OF REYNOLDS NUMBER

(B)MACH = .90


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2028) 8 FA28. MSFC TWT 656. CONF 16. 007E2300A117333
 (FA2014) 8 DATA NOT AVAILABLE

REFERENCE INFORMATION
 REF 9.1580 SQ. IN.
 LIFT 9.1612 IN.
 DRIFT 3.7470 IN.
 DRIP 2.7120 IN.
 TROP .0000 IN.
 SCALE .4000 FEET/IN.

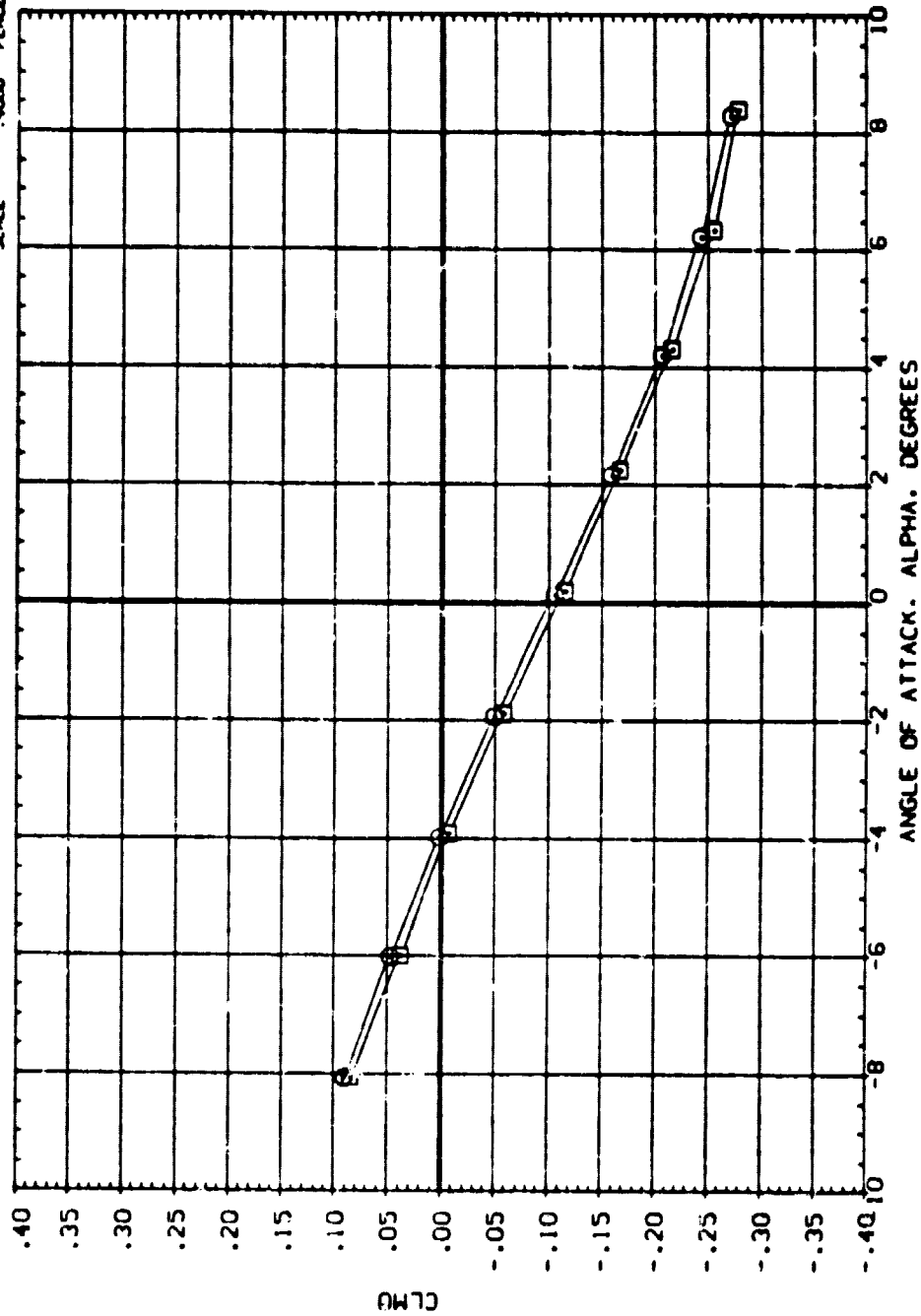


EFFECT OF REYNOLDS NUMBER
 (C)MACH = .95

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DATA SET SYMBOL: (FA2014)  CONFIGURATION DESCRIPTION: P420: MSC TWT 656. CONF 16. QNZE 200P411353
P420: MSC TWT 656. CONF 16. QNZE 200P411353

REFERENCE INFORMATION
SHEET 6 1980 50. IN
LAST 5 1612 10. IN
SHEET 3 7470 10. IN
WARP 2 7120 10. IN
ZWRP .0000 10. IN
SCALE .4000 PERCENT

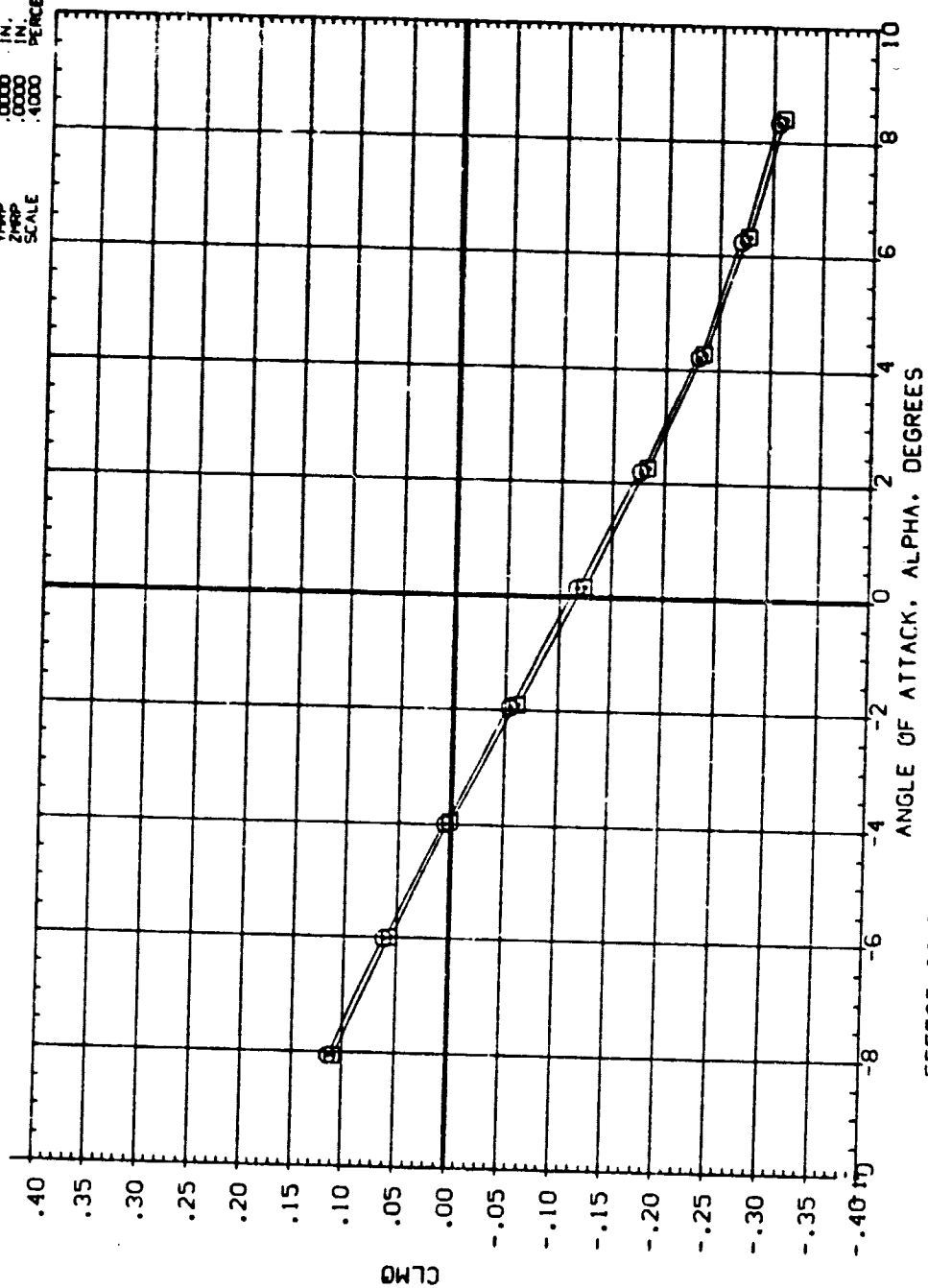


EFFECT OF REYNOLDS NUMBER

(O)MACH = 1.05

DATA SET SYMBOL: (FA2808) 8
 CONFIGURATION DESCRIPTION: FA28. MSFC TVT 656. CONFIG. 02NZE20PAAT1353
 FA28. MSFC TVT 656. CONFIG. 02NZE20PAAT1353

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF REYNOLDS NUMBER

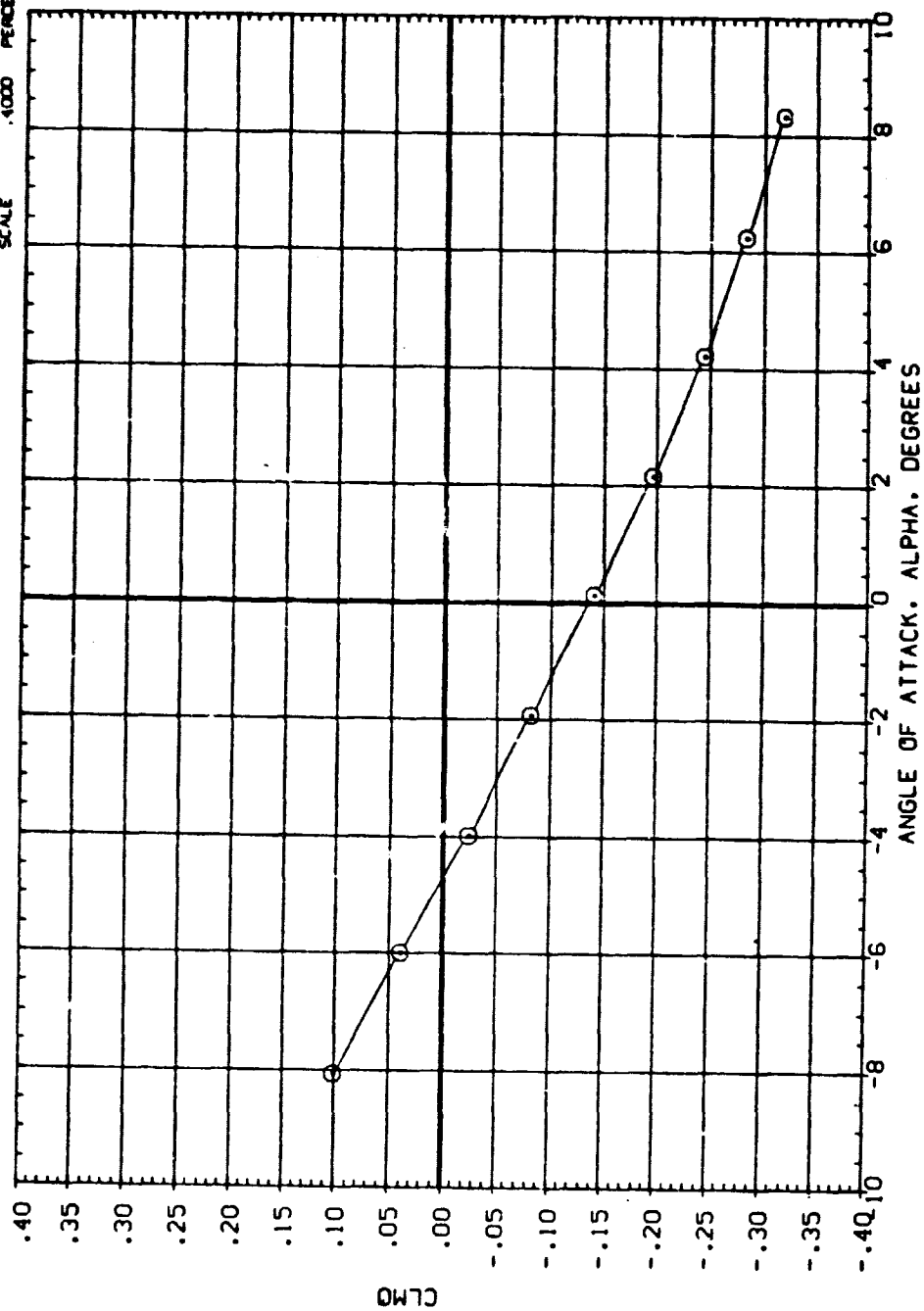
(E)MACH = 1.10

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C - 4


DATA SET SYMBOL: FA28. MSFC TWT 656. CONFIG. 02V2E2P4P1T3S3
 (FA2808) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .1000 PERCENT

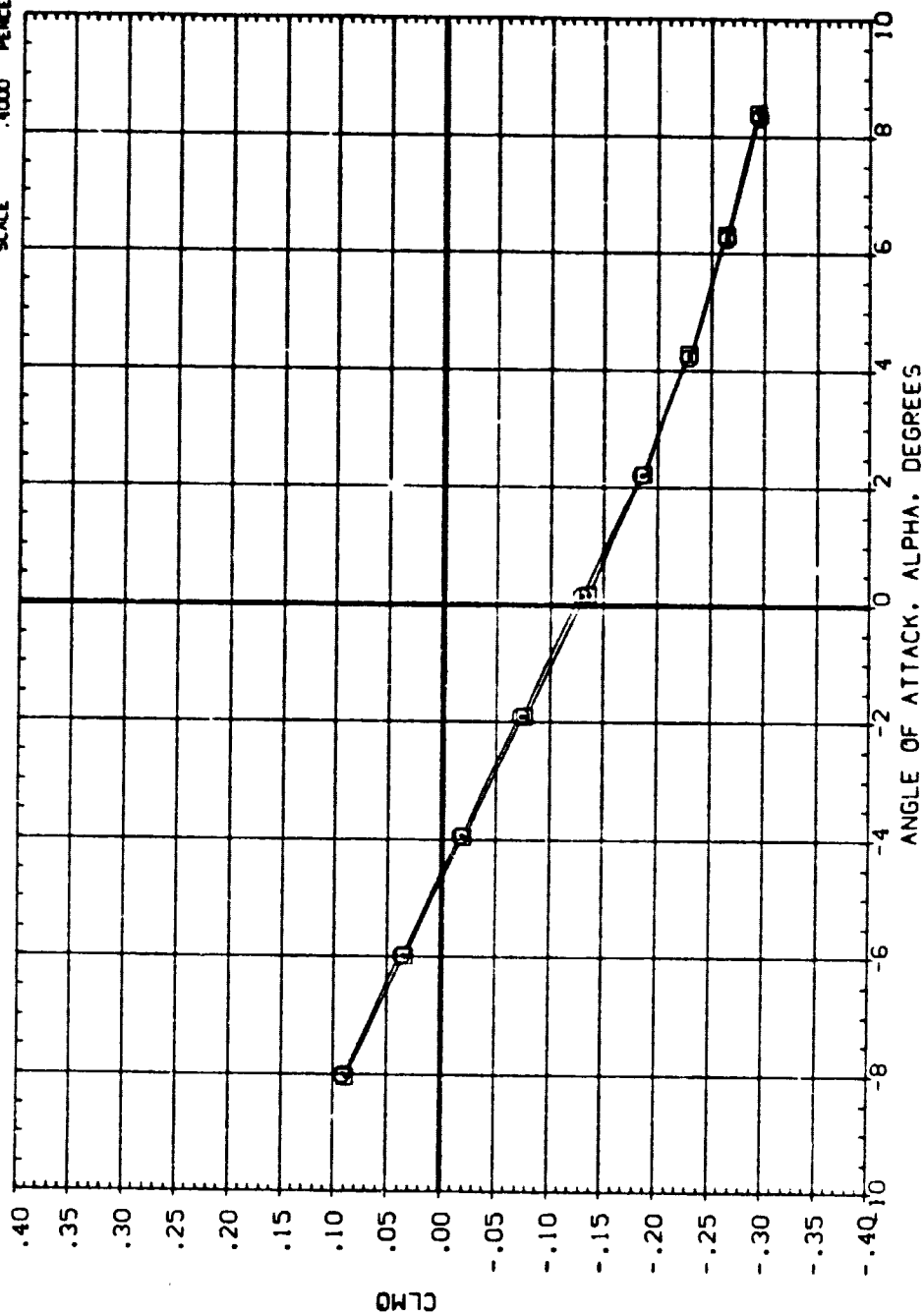


EFFECT OF REYNOLDS NUMBER

(F)MACH = 1.15

DATA SET SYMBOL: (FA2808) (FA2814)  CONFIGURATION DESCRIPTION: FA28: MSFC TWT 656; CONF IG: 02N2E20PATT1353
FA28: MSFC TWT 656; CONF IG: 02N2E20PATT1353

REFERENCE IN: JNATION
SREF 6.1580 90. IN
LREF 5.1612 IN.
BREF 3.7470 IN.
YREF 2.7160 IN.
ZREF .0000 IN.
SCALE .0000 PERCENT

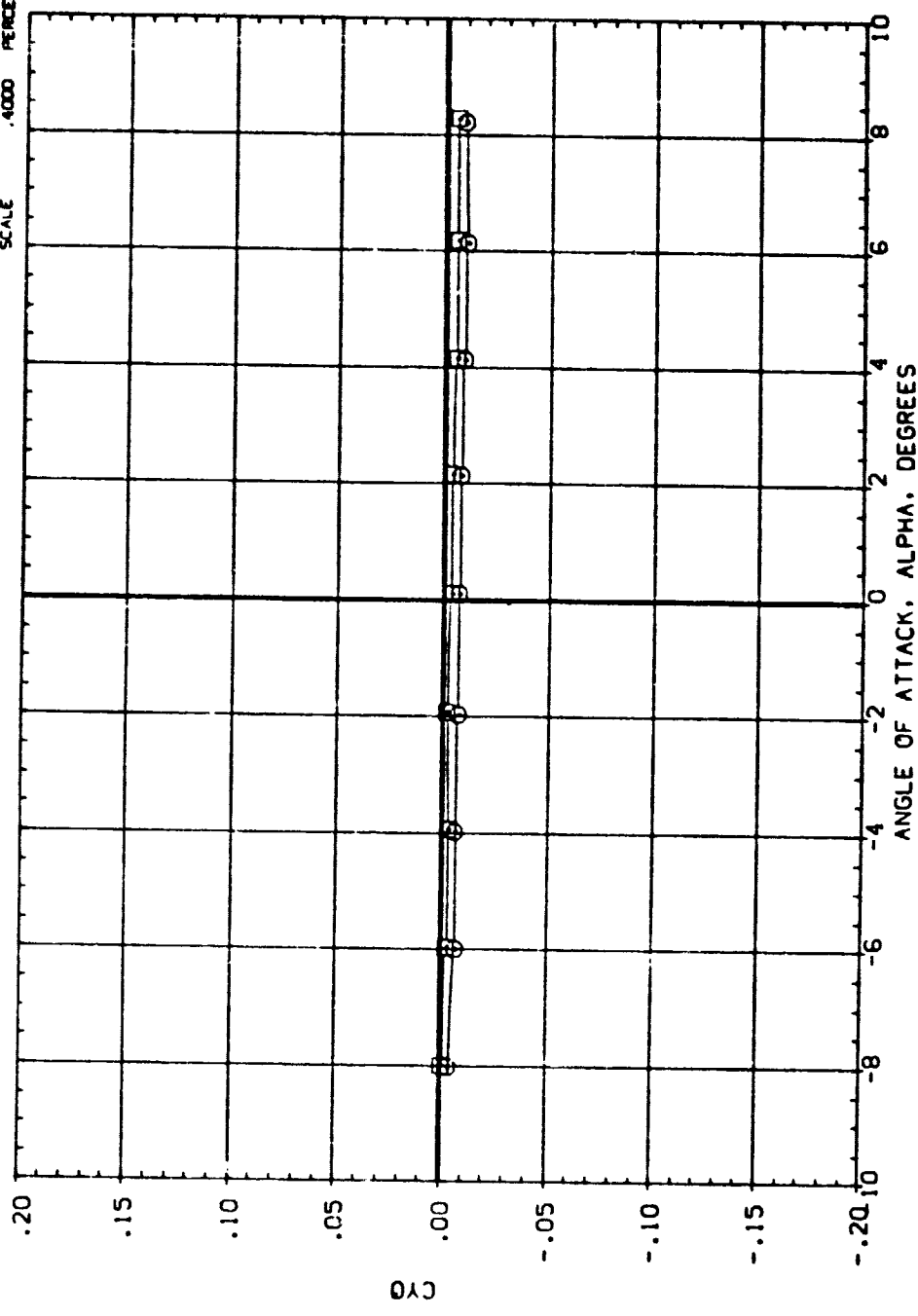


EFFECT OF REYNOLDS NUMBER

(G)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) □ FA28. MSFC TWT 656. CONFIG. 02NZE2PMPAAT1353
 (FA2814) □ FA28. MSFC TWT 656. CONFIG. 02NZE2PMPAAT1353

REFERENCE INFORMATION
 SREF 6.1800 SQ. IN.
 BREF 3.1612 IN.
 DREF 2.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

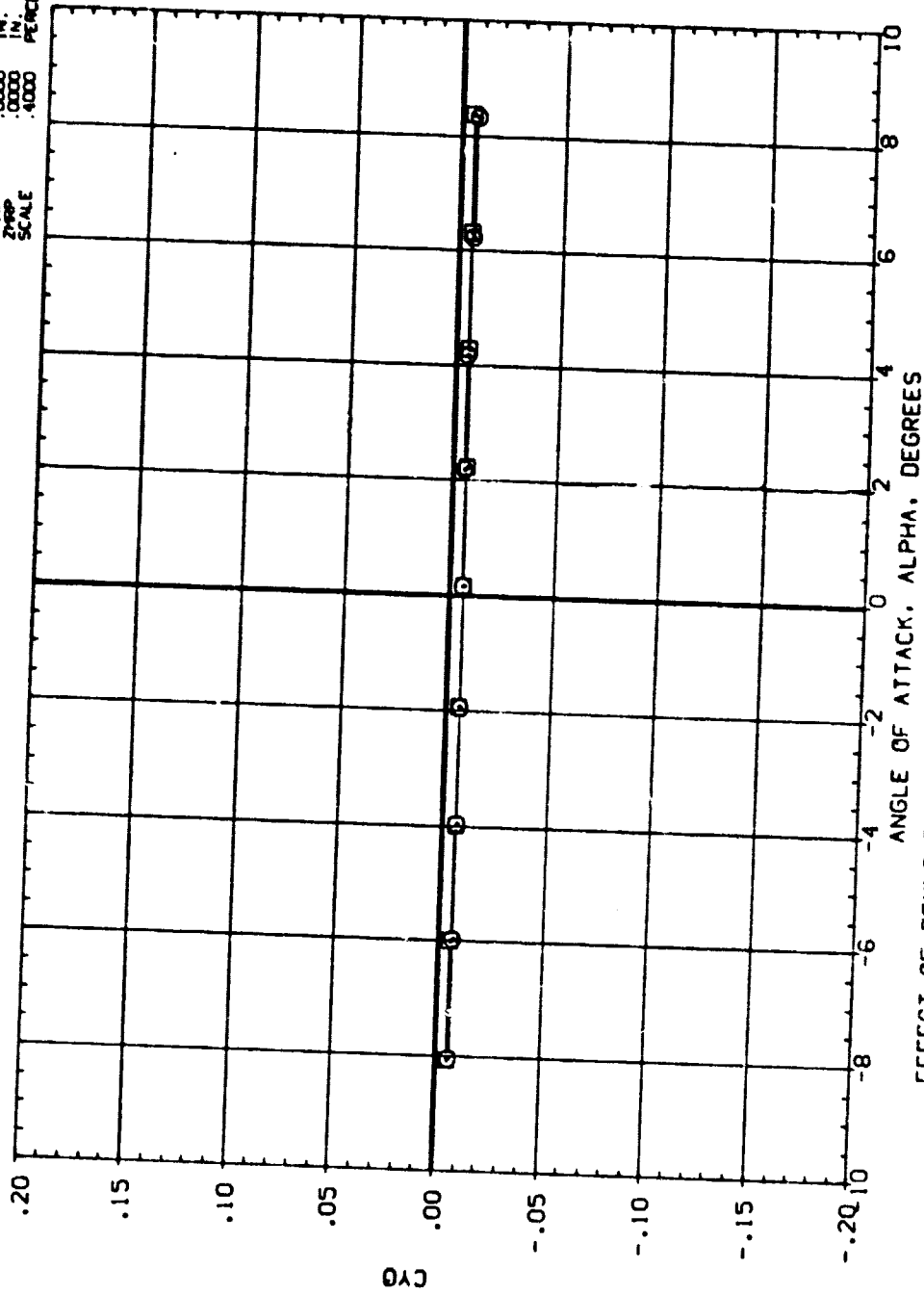


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
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 (FA2814) A FA28. MSFC TVT 656. CONF 16. 02NZE2PAPAT1353

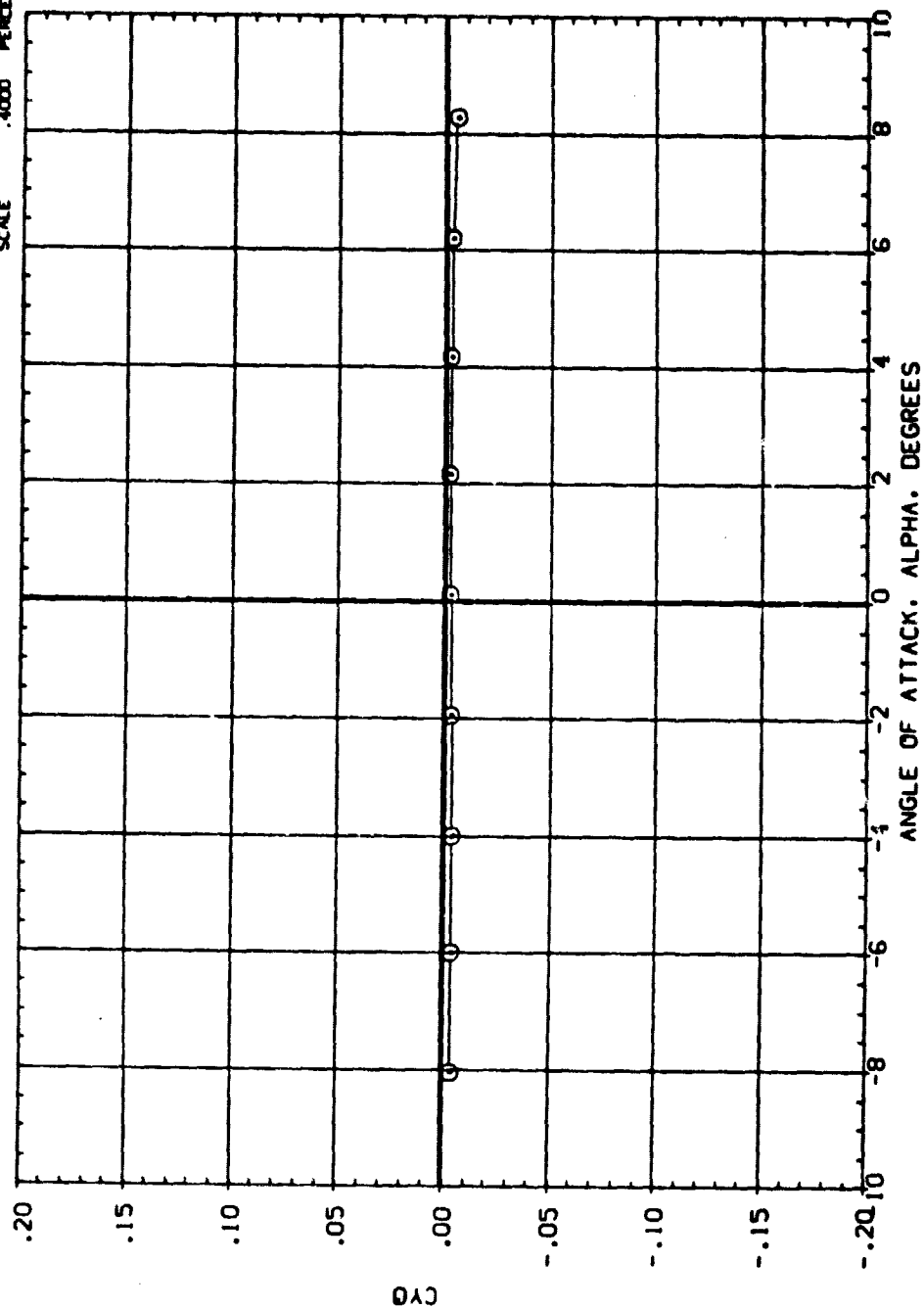
REFERENCE INFORMATION
 SREF 6.1580 SQ. IN
 LREF 5.1612 IN.
 MREF 3.7470 IN.
 VREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF REYNOLDS NUMBER
 (B)MACH = .90


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2808) ☐ FA28. MSFC TWT 656. CONFIG. 02V2E2P4PAAT1353
 (FA2814) ☐ DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 5.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

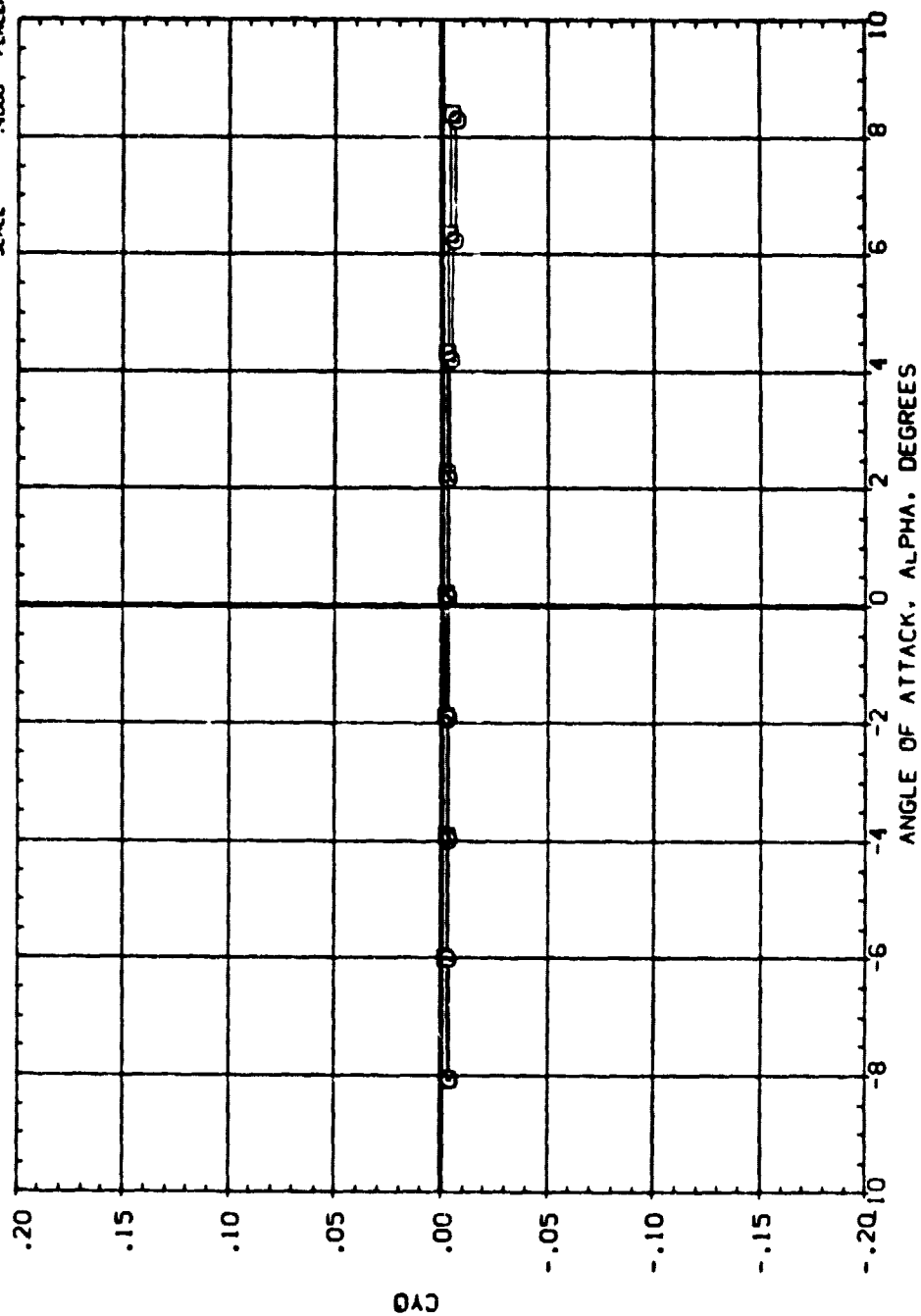


EFFECT OF REYNOLDS NUMBER

(C)MACH = .95

DATA SET SYMBOL: (FA2808) (FA2814)  CONFIGURATION DESCRIPTION: FA28. MSC TVT 655. CONF 1G. DZNGE ZPPAAT1253 FA28. MSC TVT 655. CONF 1G. DZNGE ZPPAAT1253

REFERENCE INFORMATION
SREF 6.1980 SQ. IN
LREF 5.1612 IN.
BREF 3.7470 IN.
ZRRP 2.7120 IN.
YRRP .0000 IN.
ZRRP .0000 IN.
SCALE .4000 PERCENT

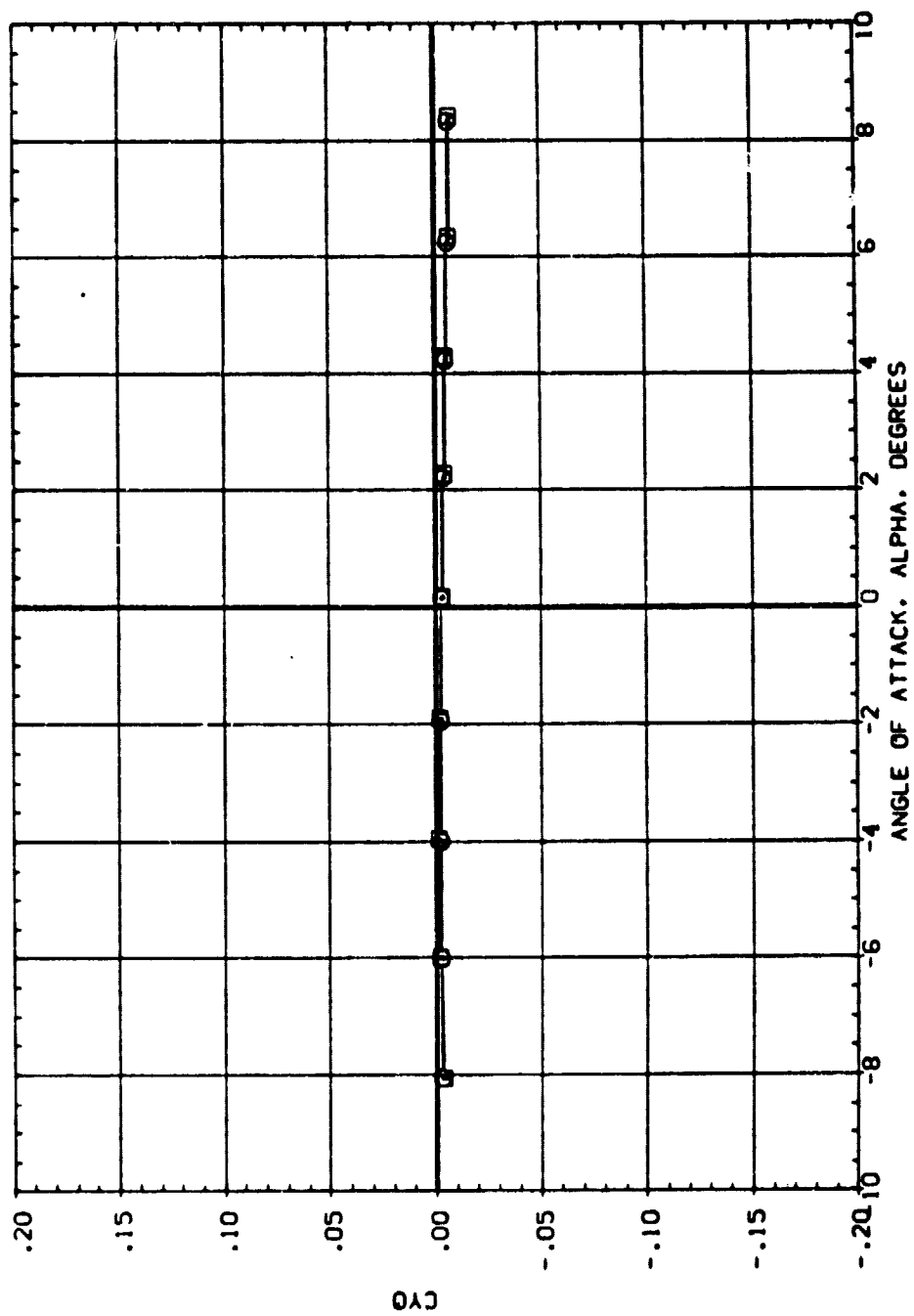


EFFECT OF REYNOLDS NUMBER

(D)MACH = 1.05

DATA SET SYMBOL: (FA2014) B
 CONFIGURATION DESCRIPTION: FA20. MSFC TWT 656. CONF 16. ONZE200PAATT353
 FA20. MSFC TWT 656. CONF 16. ONZE200PAATT353

REFERENCE INFORMATION:
 SREF: 6.1580 IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 YREF: 2.7120 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT

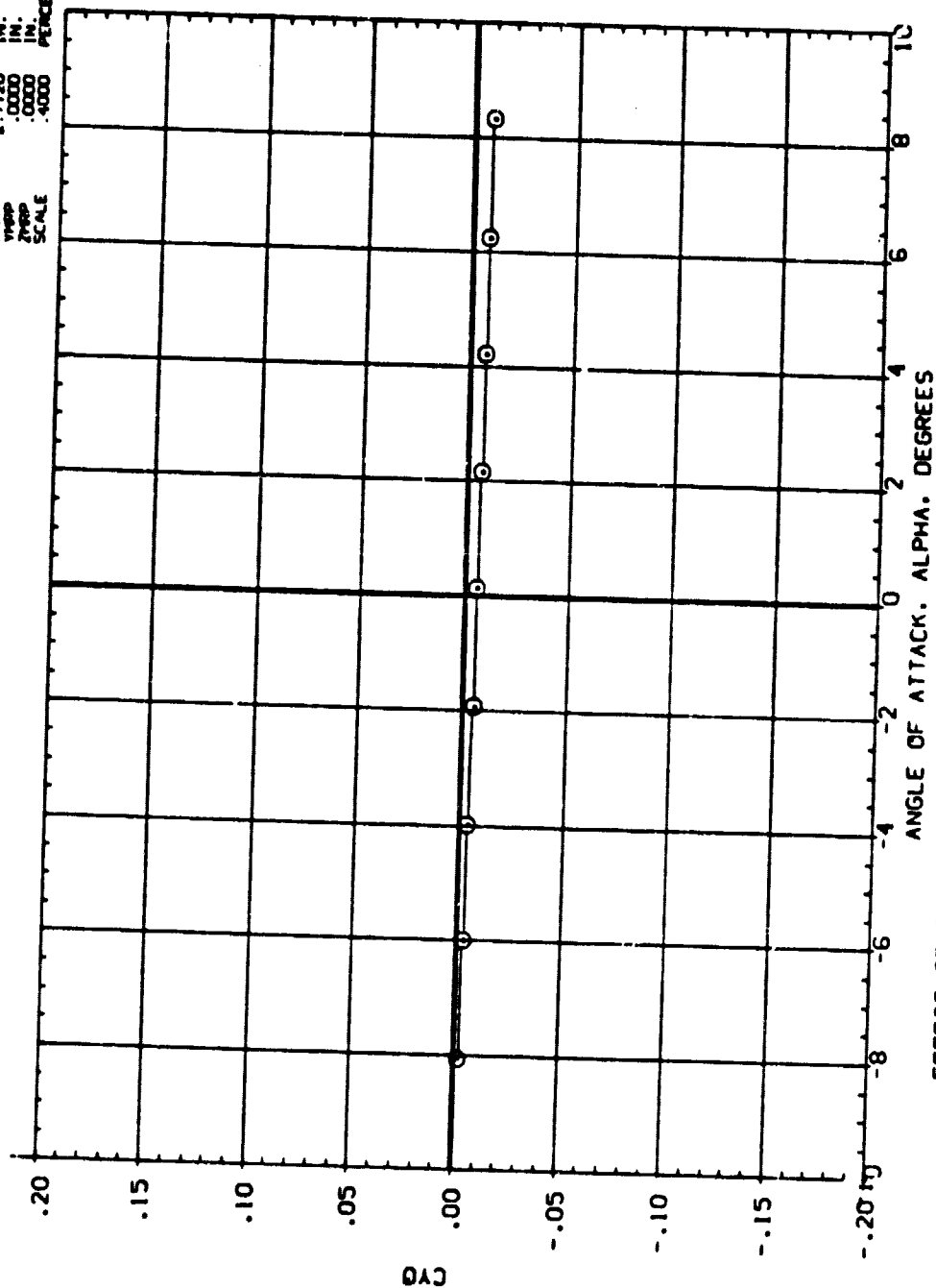


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.10



DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: 6A28, MSFC 101 655, CONFIG. CONVECTIONAL
 DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF: 6.1580 IN
 LREF: 5.1612 IN
 GREF: 3.7470 IN
 XREF: 2.7120 IN
 YREF: .0000 IN
 ZREF: .0000 IN
 SCALE: .4000 PERCENT

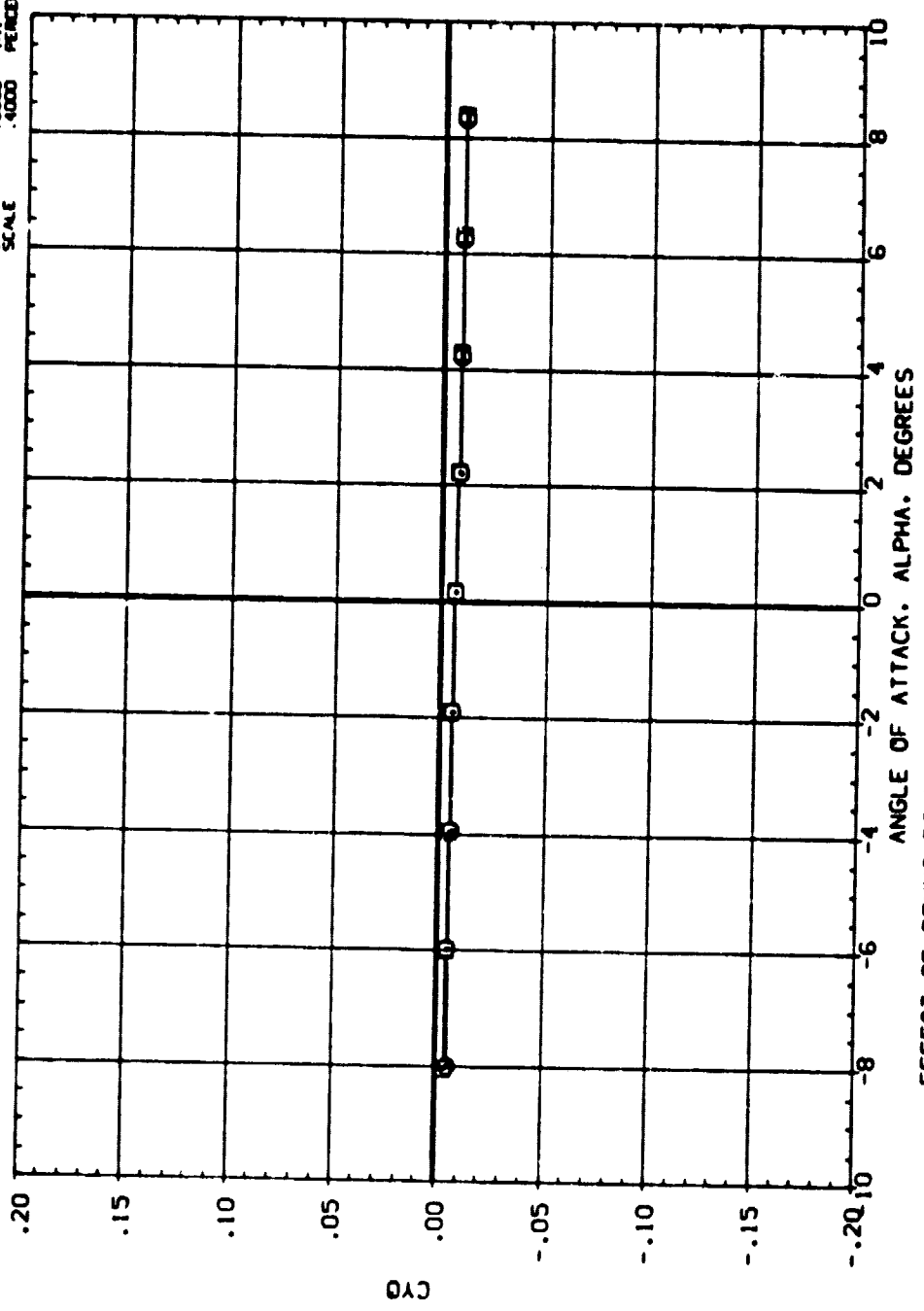


EFFECT OF REYNOLDS NUMBER

(F)MACH = 1.15

DATA SET SYMBOL: (FA2814)  CONFIGURATION DESCRIPTION: FA28. MSFC 1W 656. CONF 10. GUNZE 2M-PAAT1753
 (FA2814)  FA28. MSFC 1W 656. CONF 10. GUNZE 2M-PAAT1753

REFERENCE INFORMATION
 SREF 5.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YPROP 2.7120 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

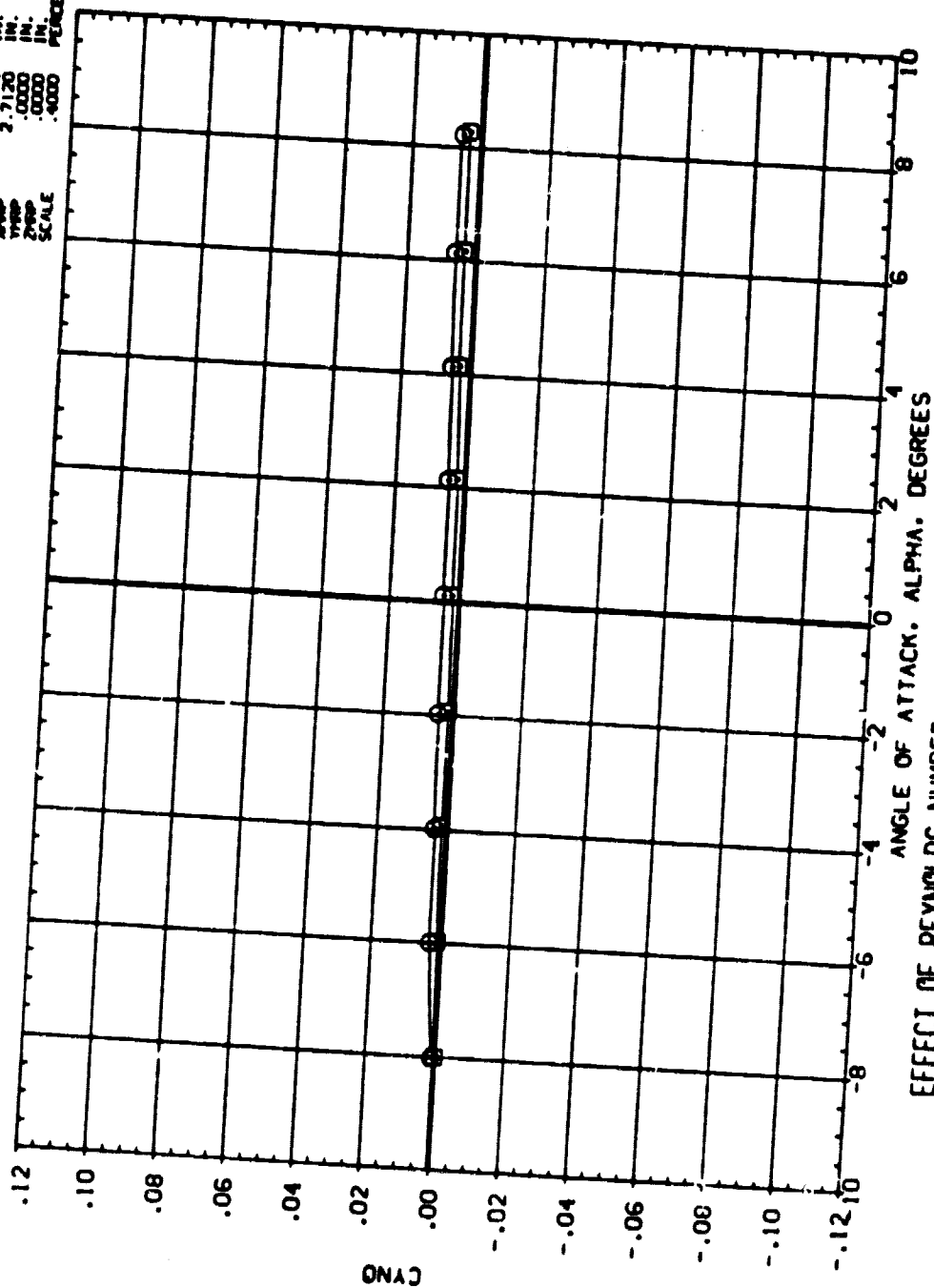


EFFECT OF REYNOLDS NUMBER

(G)MACH = 1.25

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA29, N57C INT 656, CONFIG. 0042Z00PA1733
 (FA2914) 8 P.J. N57C INT 656, CONFIG. 0042Z00PA1733

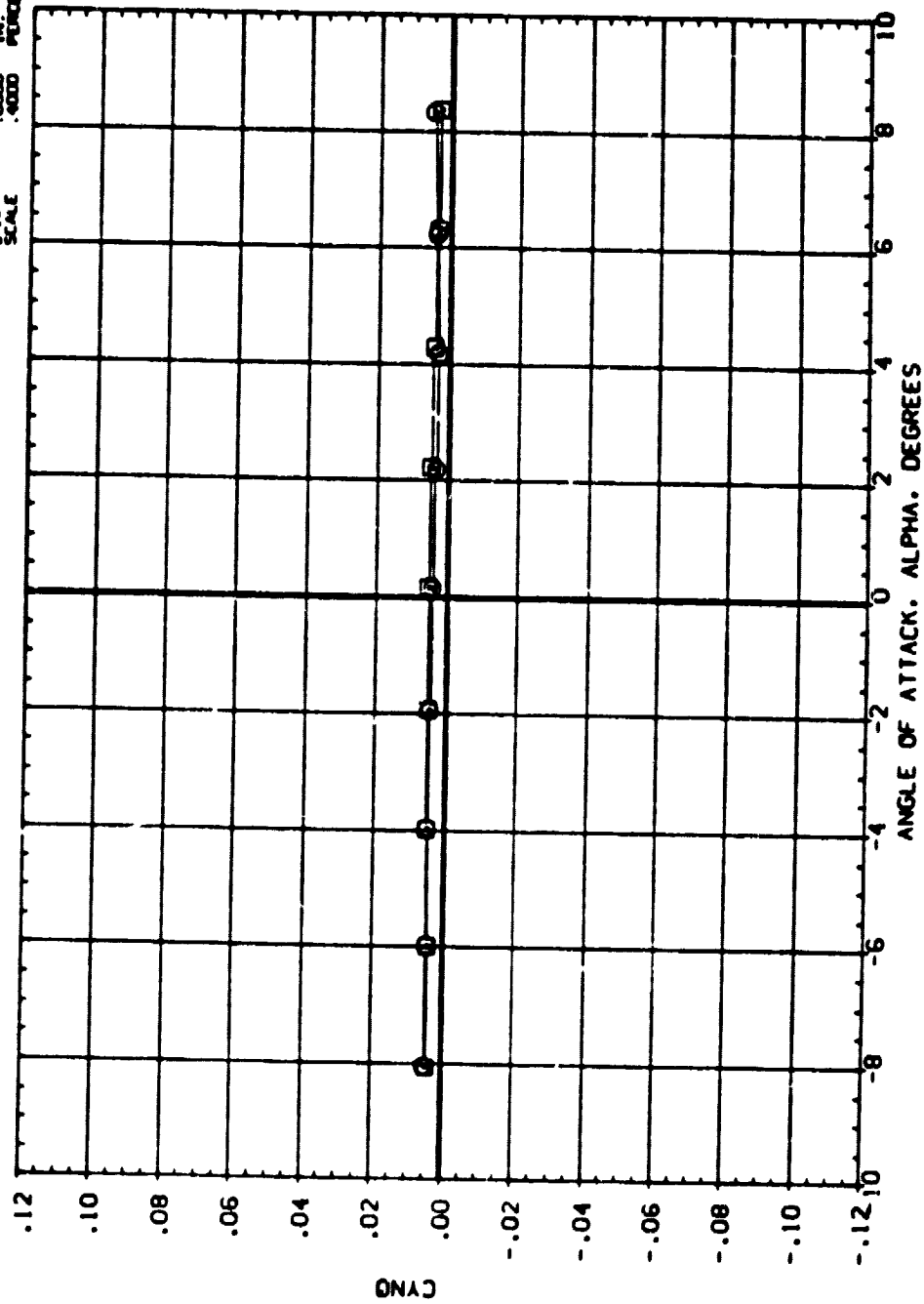
REFERENCE INFORMATION
 SREF 6.1880 90. IN.
 LREF 3.1612 IN.
 BREF 2.7970 IN.
 WREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF REYNOLDS NUMBER
 (A)MACH = .60

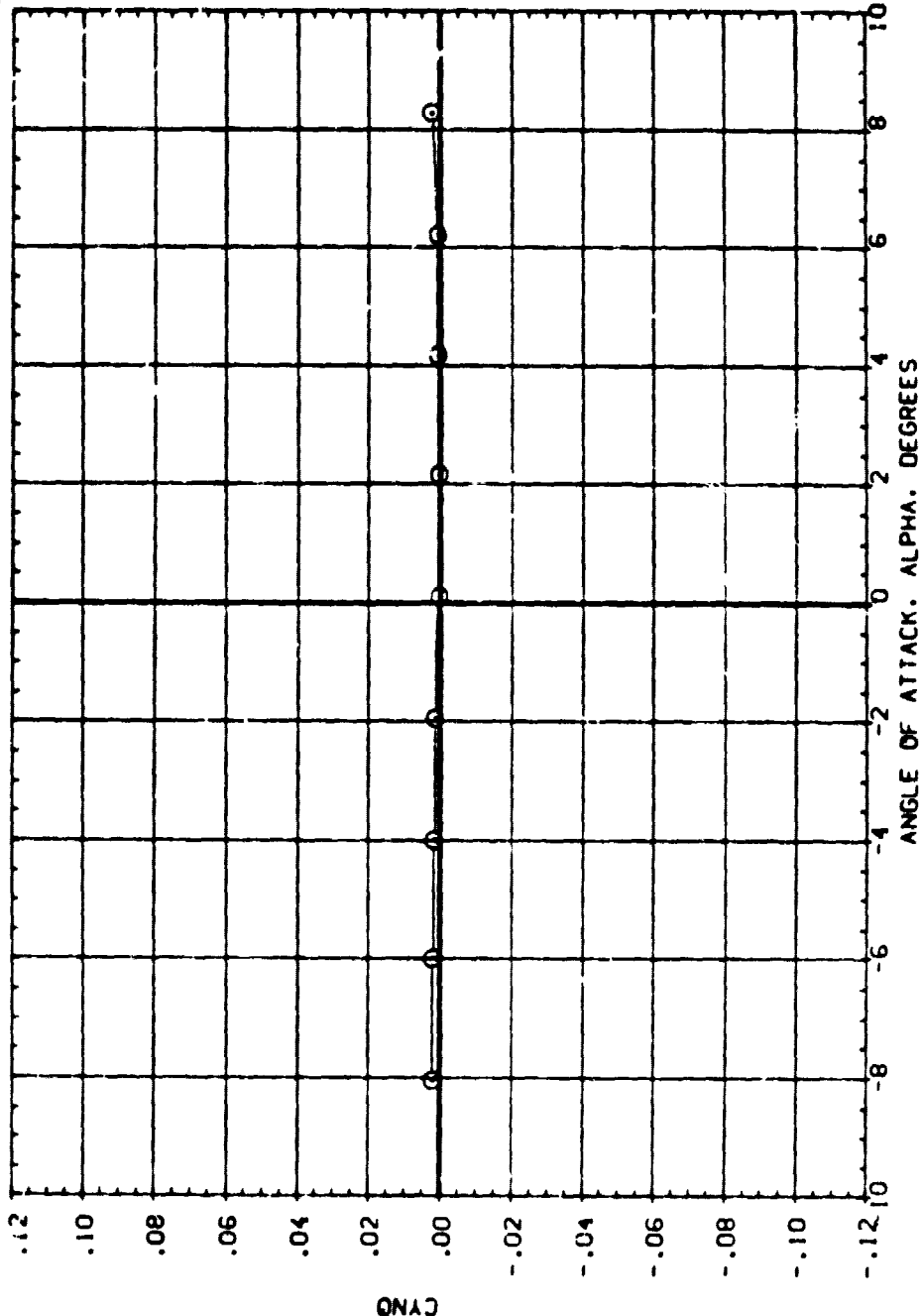
F A 20. 105°C 141 656. 024Z 20041133
F A 20. 105°C 141 656. 024Z 20041133

NET	6.190	IN
LIES	5.161	IN
DEP	3.247	IN
WAP	2.712	IN
WAP	.000	IN
WAP	.000	IN
SCALE	.000	PERCEN


$$(B)_{MACH} = .90$$

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION: CAPR. HSC. YUT 656. CONFIG. COUZE 34-PA11353
 (FA2009) (FA2014) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SET 6. 980 50. IN
 LREF 3. 612 IN.
 BREF 3. 470 IN.
 BRP 2. 120 IN.
 BRP .000 IN.
 BRP .000 IN.
 SCALE 1000 PERCENT

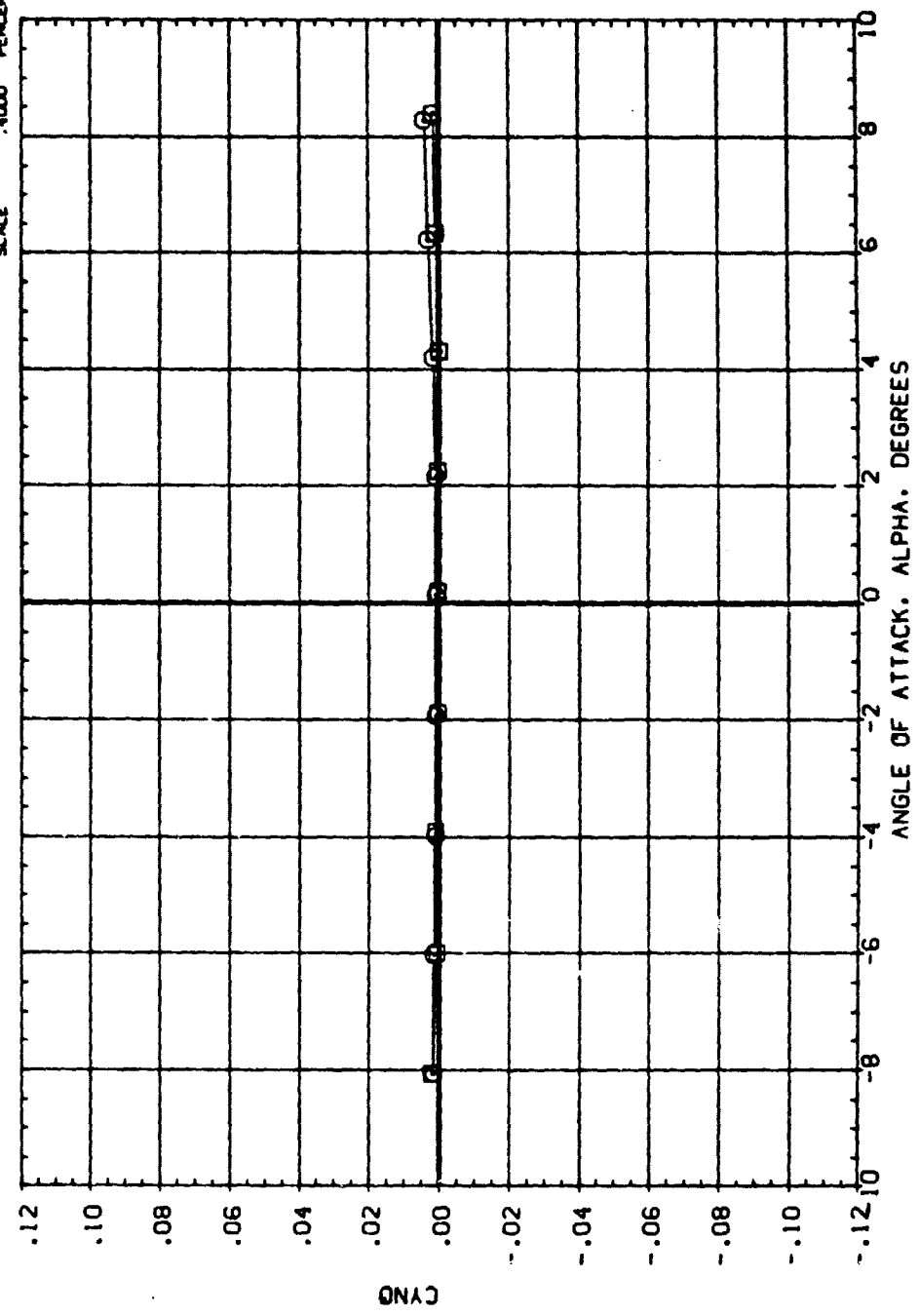


EFFECT OF REYNOLDS NUMBER

(C)MACH = .95

DATA SET SYMBOL: 8
 (FA2808)
 (FA2814)

REFERENCE INFORMATION
 SREF: 6.1980 IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 XREF: 2.7120 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .4000 PERCENT

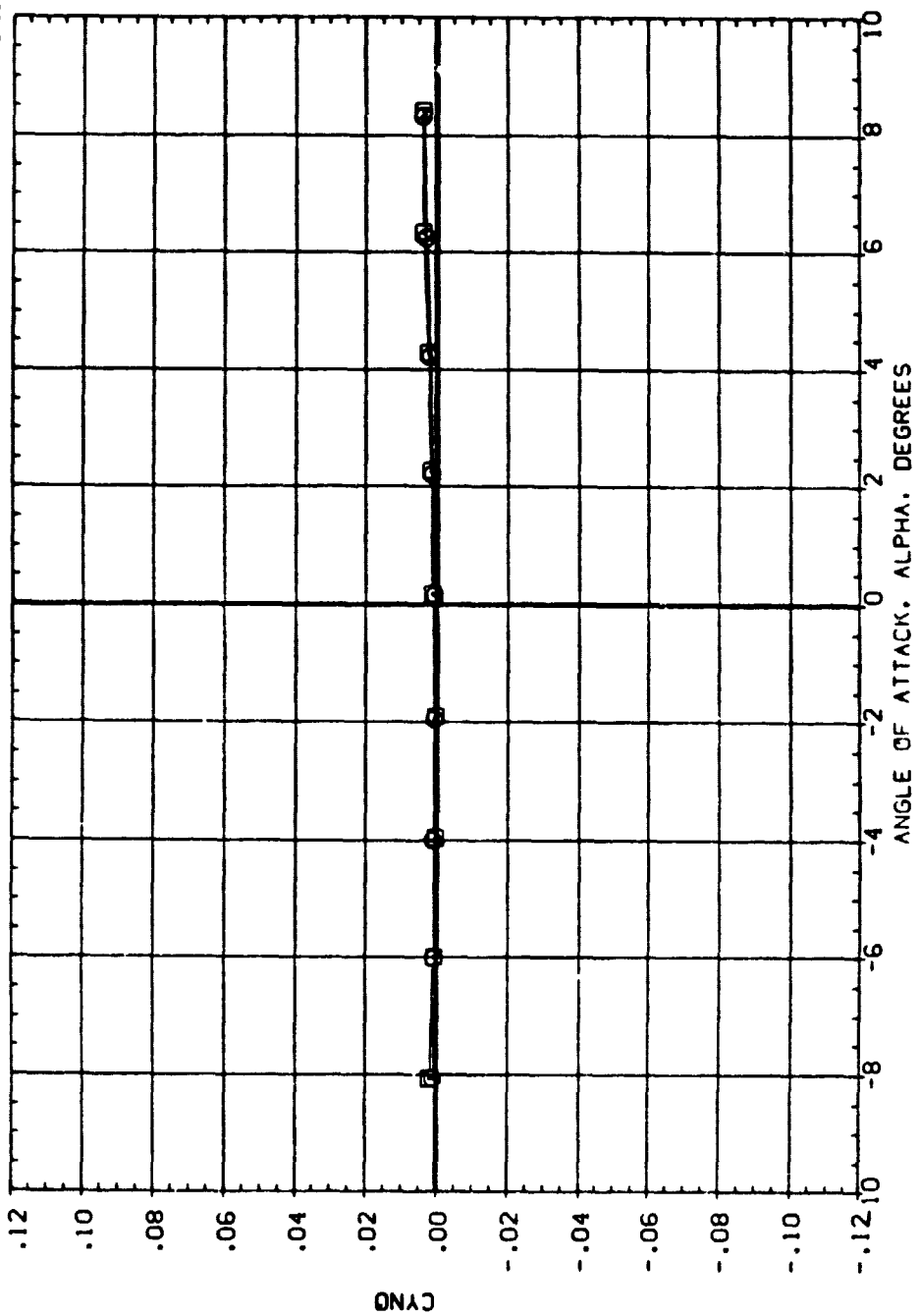


EFFECT OF REYNOLDS NUMBER

(D)MACH = 1.05

DATA SET SYMBOL: ☐ FA28, M5FC TVT 656, CONFIG. 02VZ22PAPATT353
☐ FA28, M5FC TVT 656, CONFIG. 02VZ22PAPATT353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.10

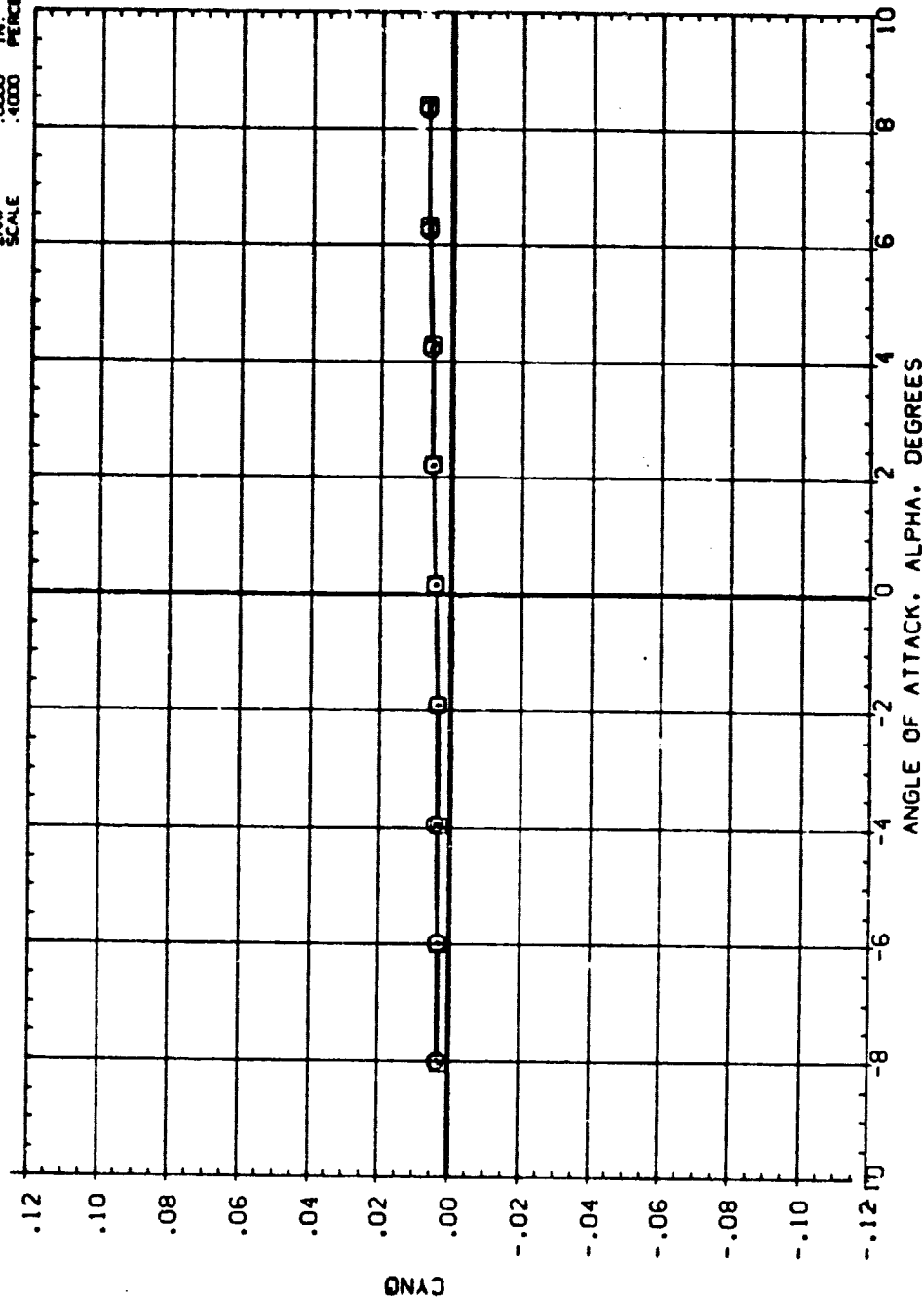
FA28. MSC TWT 636.
DATA NOT AVAILABLE

2100
SCALE


$$(F)_{MACH} = 1.15$$

DATA SET SYMBOL: (FA2808) □
 CONFIGURATION DESCRIPTION: FA28: MSFC TWT 655; CONF 1G. 02NZE20PAAT1353
 FA28: MSFC TWT 655; CONF 1G. 02NZE20PAAT1353

REFERENCE INFORMATION
 SREF 6.1960 SO. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

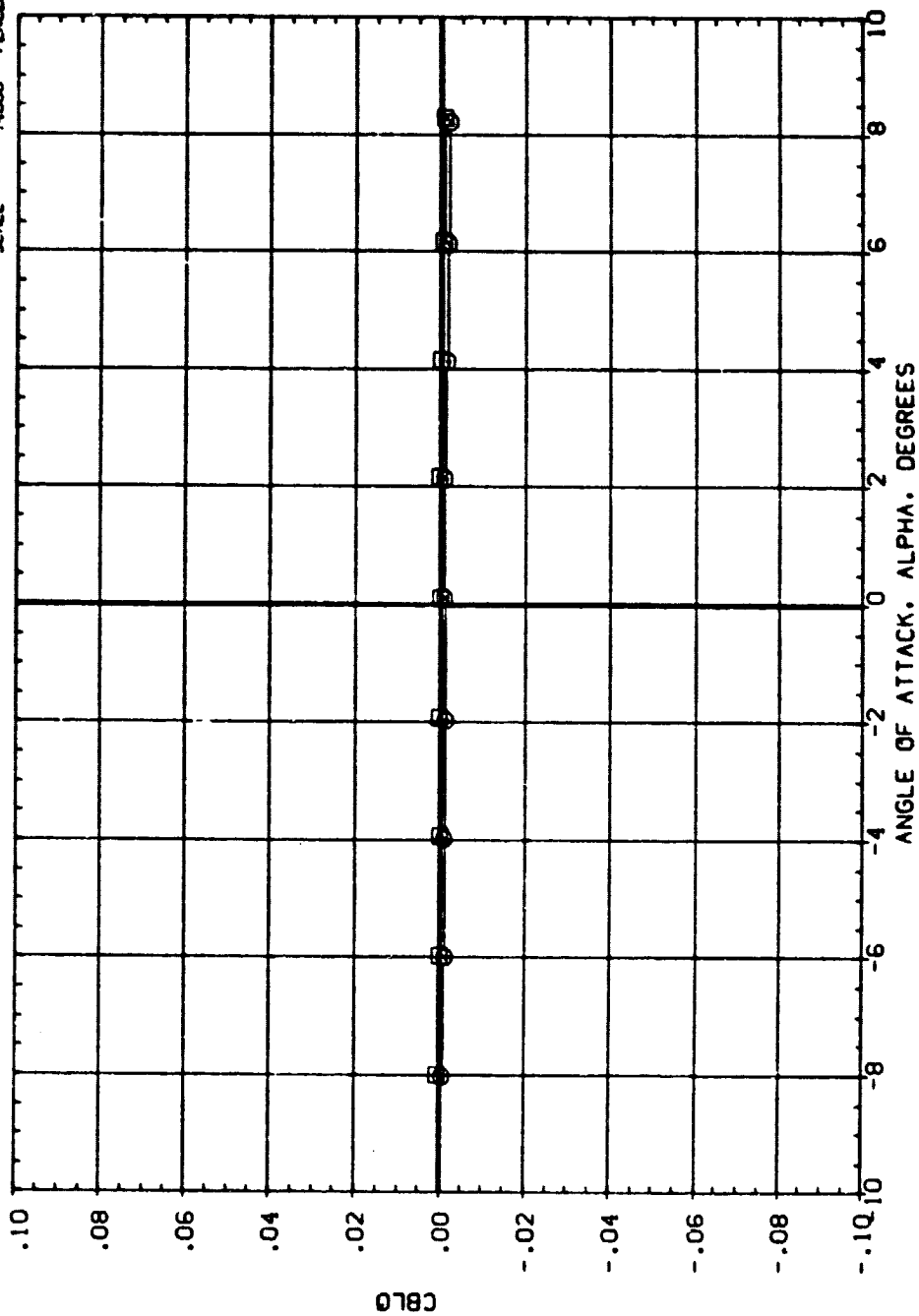


EFFECT OF REYNOLDS NUMBER

(G)MACH = 1.25

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28, MSC TWT 656, CONF IG. 02VZ23P0A11253
 (FA2814) FA28, MSC TWT 656, CONF IG. 02VZ23P0A11253

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 SCALE .0000 PERCENT



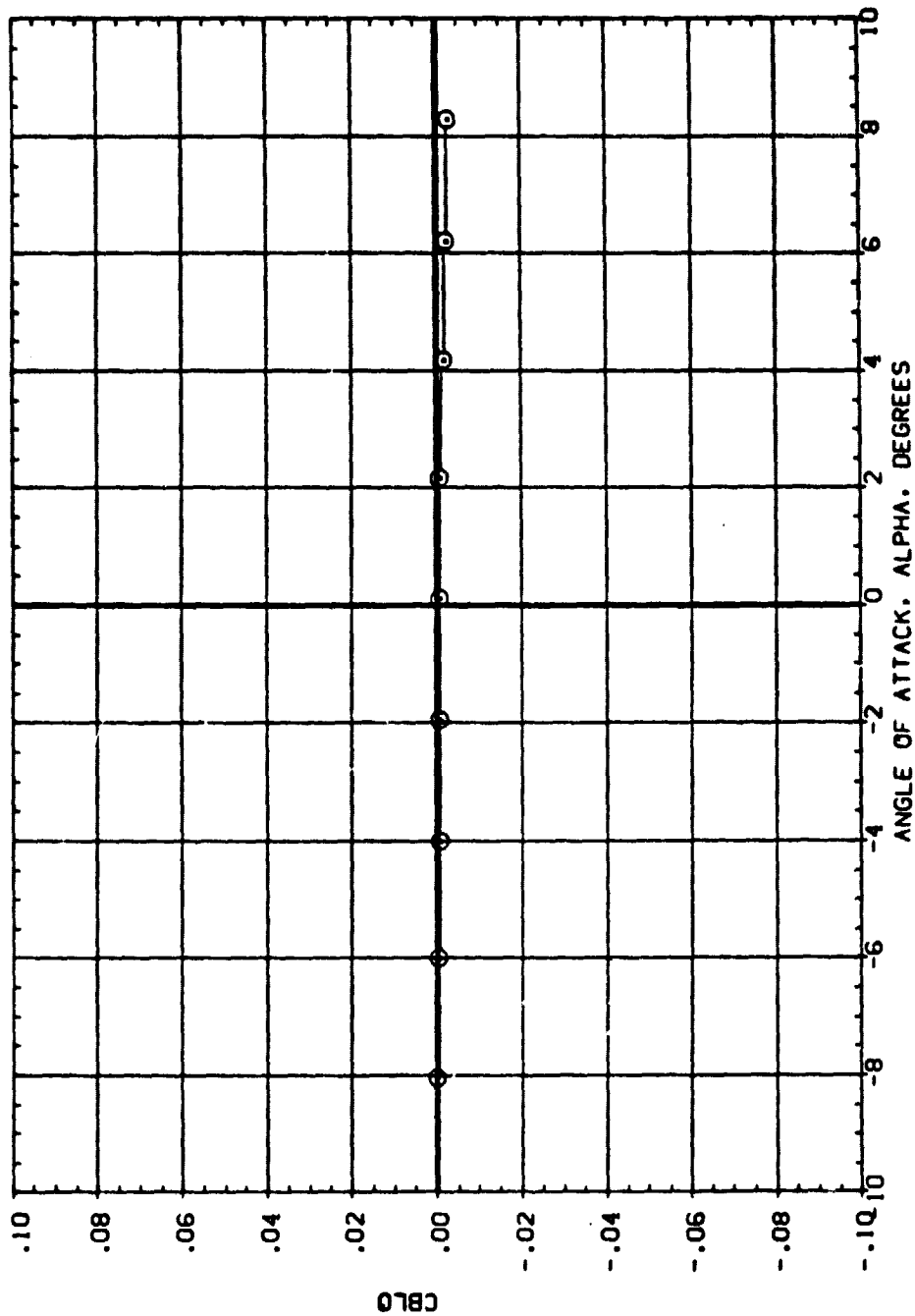
EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

DATA SET SYMBOL: 8
 (FA2814) 8
 CONFIGURATION DESCRIPTION: 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 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1678. 1679. 1680. 1681. 1682. 1683. 1684. 1685. 1686. 1687. 1688. 1689. 1690. 1691. 1692. 1693. 1694. 1695. 1696. 1697. 1698. 1699. 1700. 1701. 1702. 1703. 1704. 1705. 1706. 1707. 1708. 1709. 1710. 1711. 1712. 1713. 1714. 1715. 1716. 1717. 1718. 1719. 1720. 1721. 1722. 1723. 1724. 1725. 1726. 1727. 1728. 1729. 1730. 1731. 1732. 1733. 1734. 1735. 1736. 1737. 1738. 1739. 1740. 1741. 1742. 1743. 1744. 1745. 1746. 1747. 1748. 1749. 1750. 1751. 1752. 1753. 1754. 1755. 1756. 1757. 1758. 1759. 1760. 1761. 1762. 1763. 1764. 1765. 1766. 1767. 1768. 1769. 1770. 1771. 1772. 1773. 1774. 1775. 1776. 1777. 1778. 1779. 1780. 1781. 1782. 1783. 1784. 1785. 1786. 1787. 1788. 1789. 1790. 1791. 1792. 1793. 1794. 1795. 1796. 1797. 1798. 1799. 1800. 1801. 1802. 1803. 1804. 1805. 1806. 1807. 1808. 1809. 1810. 1811. 1812. 1813. 1814. 1815. 1816. 1817. 1818. 1819. 1820. 1821. 1822. 1823. 1824. 1825. 1826. 1827. 1828. 1829. 1830. 1831. 1832. 1833. 1834. 1835. 1836. 1837. 1838. 1839. 1840. 1841. 1842. 1843. 1844. 1845. 1846. 1847. 1848. 1849. 1850. 1851. 1852. 1853. 1854. 1855. 1856. 1857. 1858. 1859. 1860. 1861. 1862. 1863. 1864. 1865. 1866. 1867. 1868. 1869. 1870. 1871. 1872. 1873. 1874. 1875. 1876. 1877. 1878. 1879. 1880. 1881. 1882. 1883. 1884. 1885. 1886. 1887. 1888. 1889. 1890. 1891. 1892. 1893. 1894. 1895. 1896. 1897. 1898. 1899. 1900. 1901. 1902. 1903. 1904. 1905. 1906. 1907. 1908. 1909. 1910. 1911. 1912. 1913. 1914. 1915. 1916. 1917. 1918. 1919. 1920. 1921. 1922. 1923. 1924. 1925. 1926. 1927. 1928. 1929. 1930. 1931. 1932. 1933. 1934. 1935. 1936. 1937. 1938. 1939. 1940. 1941. 1942. 1943. 1944. 1945. 1946. 1947. 1948. 1949. 1950. 1951. 1952. 1953. 1954. 1955. 1956. 1957. 1958. 1959. 1960. 1961. 1962. 1963. 1964. 1965. 1966. 1967. 1968. 1969. 1970. 1971. 1972. 1973. 1974. 1975. 1976. 1977. 1978. 1979. 1980. 1981. 1982. 1983. 1984. 1985. 1986. 1987. 1988. 1989. 1990. 1991. 1992. 1993. 1994. 1995. 1996. 1997. 1998. 1999. 2000. 2001. 2002. 2003. 2004. 2005. 2006. 2007. 2008. 2009. 2010. 2011. 2012. 2013. 2014. 2015. 2016. 2017. 2018. 2019. 2020. 2021. 2022. 2023. 2024. 2025. 2026. 2027. 2028. 2029. 2030. 2031. 2032. 2033. 2034. 2035. 2036. 2037. 2038. 2039. 2040. 2041. 2042. 2043. 2044. 2045. 2046. 2047. 2048. 2049. 2050. 2051. 2052. 2053. 2054. 2055. 2056. 2057. 2058. 2059. 2060. 2061. 2062. 2063. 2064. 2065. 2066. 2067. 2068. 2069. 2070. 2071. 2072. 2073. 2074. 2075. 2076. 2077. 2078. 2079. 2080. 2081. 2082. 2083. 2084. 2085. 2086. 2087. 2088. 2089. 2090. 2091. 2092. 2093. 2094. 2095. 2096. 2097. 2098. 2099. 2100. 2101. 2102. 2103. 2104. 2105. 2106. 2107. 2108. 2109. 2110. 2111. 2112. 2113. 2114. 2115. 2116. 2117. 2118. 2119. 2120. 2121. 2122. 2123. 2124. 2125. 2126. 2127. 2128. 2129. 2130. 2131. 2132. 2133. 2134. 2135. 2136. 2137. 2138. 2139. 2140. 2141. 2142. 2143. 2144. 2145. 2146. 2147. 2148. 2149. 2150. 2151. 2152. 2153. 2154. 2155. 2156. 2157. 2158. 2159. 2160. 2161. 2162. 2163. 2164. 2165. 2166. 2167. 2168. 2169. 2170. 2171. 2172. 2173. 2174. 2175. 2176. 2177. 2178. 2179. 2180. 2181. 2182. 2183. 2184. 2185. 2186. 2187. 2188. 2189. 2190. 2191. 2192. 2193. 2194. 2195. 2196. 2197. 2198. 2199. 2200. 2201. 2202. 2203. 2204. 2205. 2206. 2207. 2208. 2209. 2210. 2211. 2212. 2213. 2214. 2215. 2216. 2217. 2218. 2219. 2220. 2221. 2222. 2223. 2224. 2225. 2226. 2227. 2228. 2229. 2230. 2231. 2232. 2233. 2234. 2235. 2236. 2237. 2238. 2239.

DATA SET SYMBOL: FA28. MSFC TVT 656, CONFIG. CONVE28MPAA11353
 (FA2808) □ DATA NOT AVAILABLE
 (FA2814)

REFERENCE INFORMATION
 REF 6.1960 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

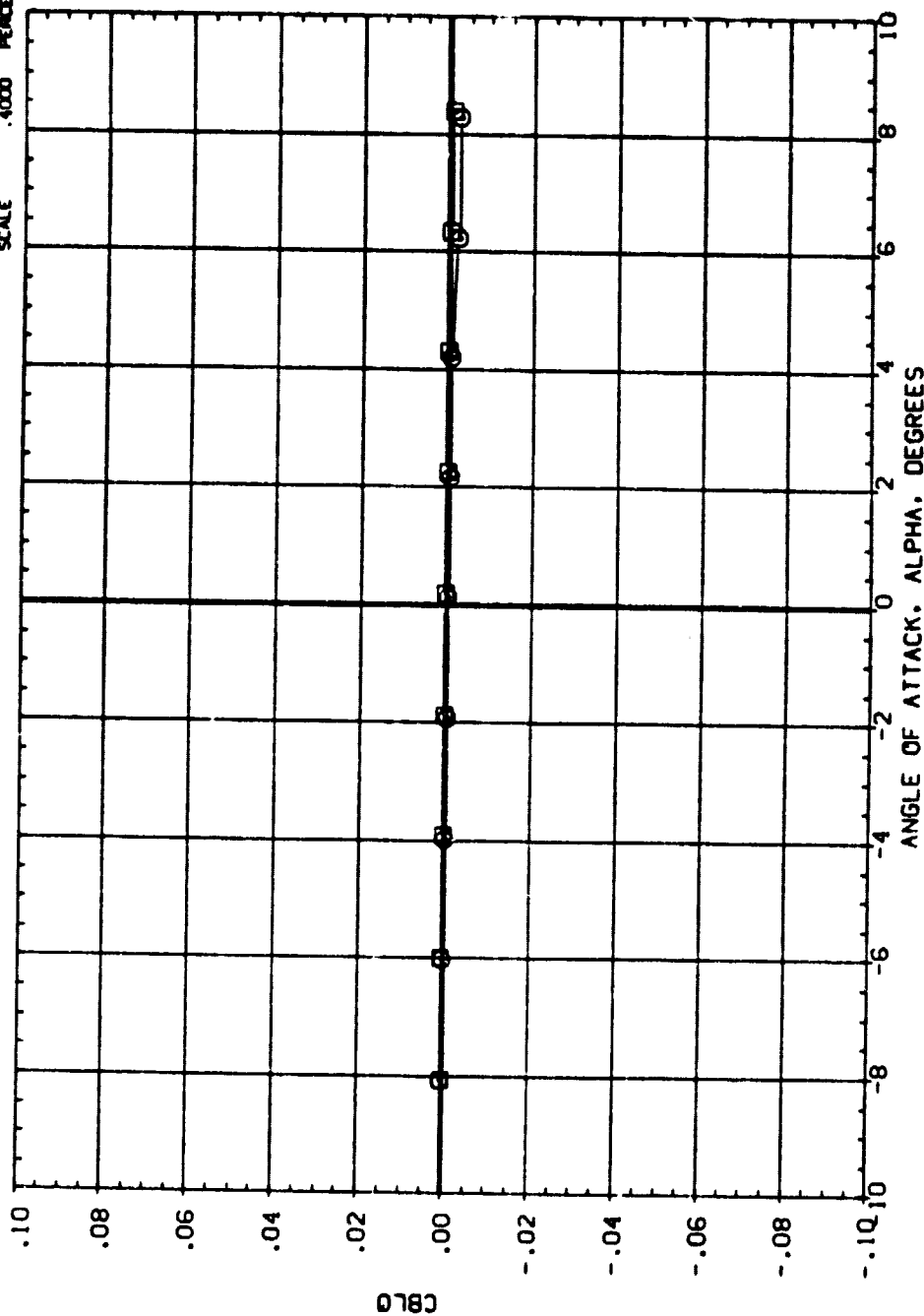


EFFECT OF REYNOLDS NUMBER

(C)MACH = .95

DATA SET SYMBOL: **Q** CONFIGURATION DESCRIPTION:
 (FA2808) FA28: MSFC TNT 656: CONFIG: 02NZE2PAAT1353
 (FA2814) FA28: MSFC TNT 656: CONFIG: 02NZE2PAAT1353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

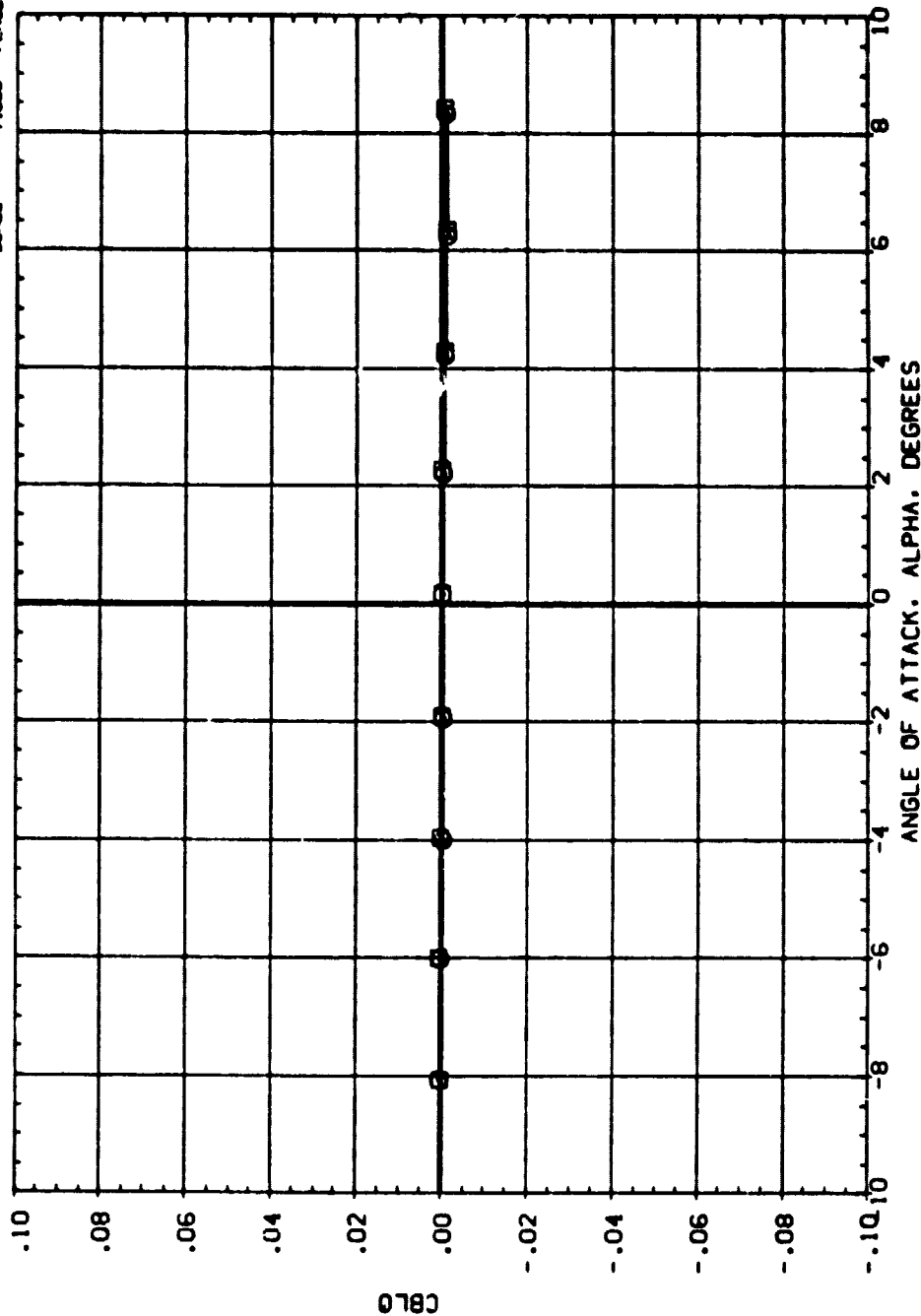


EFFECT OF REYNOLDS NUMBER

(O)MACH = 1.05

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2008) □ FA20. MSFC TWT 656. CONF 10. 00VZ2PAPAAIT753
 (FA2014) □ FA20. MSFC TWT 656. CONF 10. 00VZ2PAPAAIT753

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT

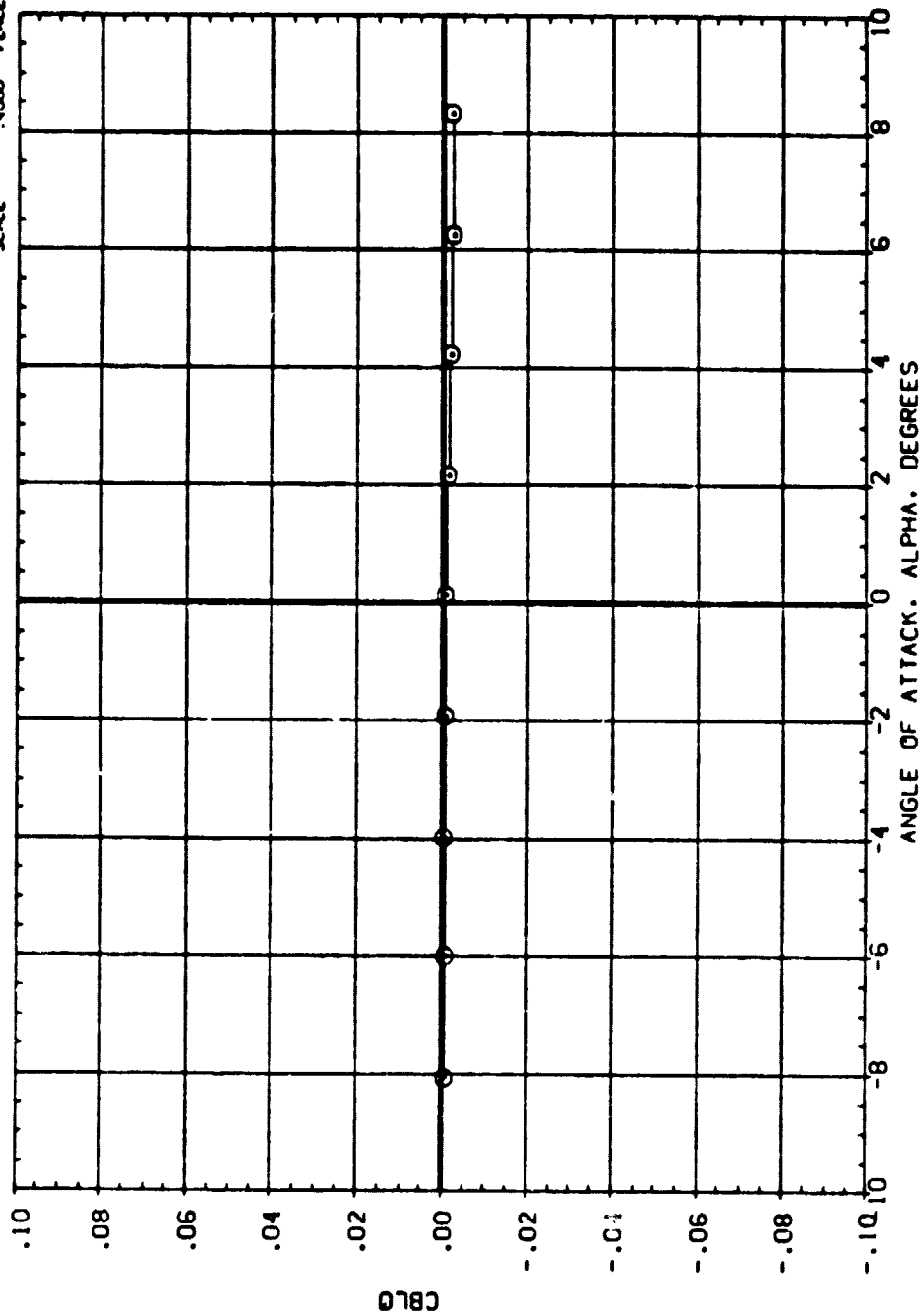


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.10

DATA SET SYMBOL: FA28. MSFC TWT 656. CONF IS. 00VZ3P-PAATT353
 (FA2808) □ DATA NOT AVAILABLE
 (FA2814)

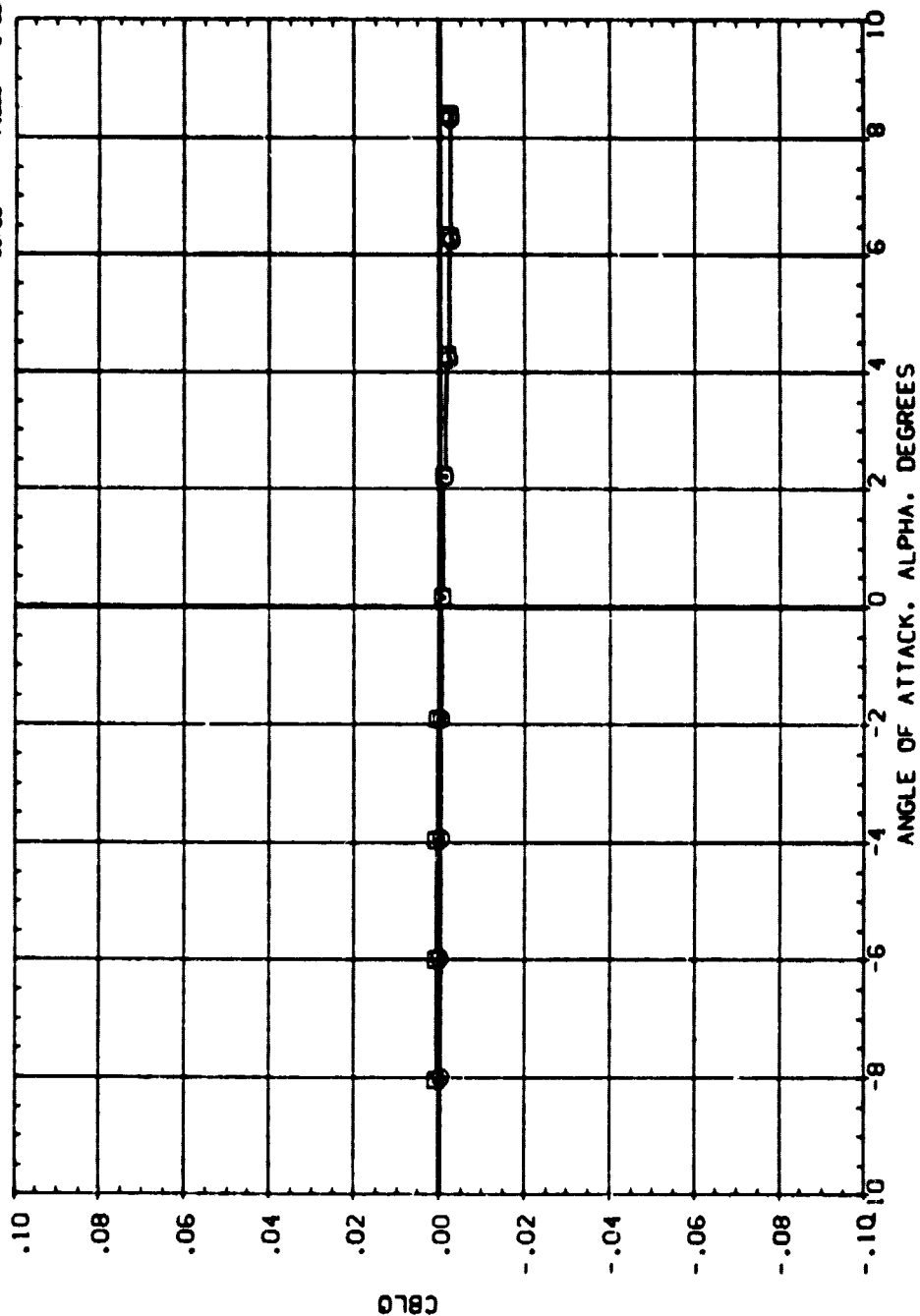
REFERENCE INFORMATION
 SREF 6.1280 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF REYNOLDS NUMBER

(F)MACH = 1.15

REFERENCE INFORMATION	
SWF	6.1980 IN.
LAUF	5.1612 IN.
SWF	3.7470 IN.
WPP	2.7120 IN.
WPP	.0000 IN.
ZWPP	.0000 IN.
SCALE	.0000 PERCENT

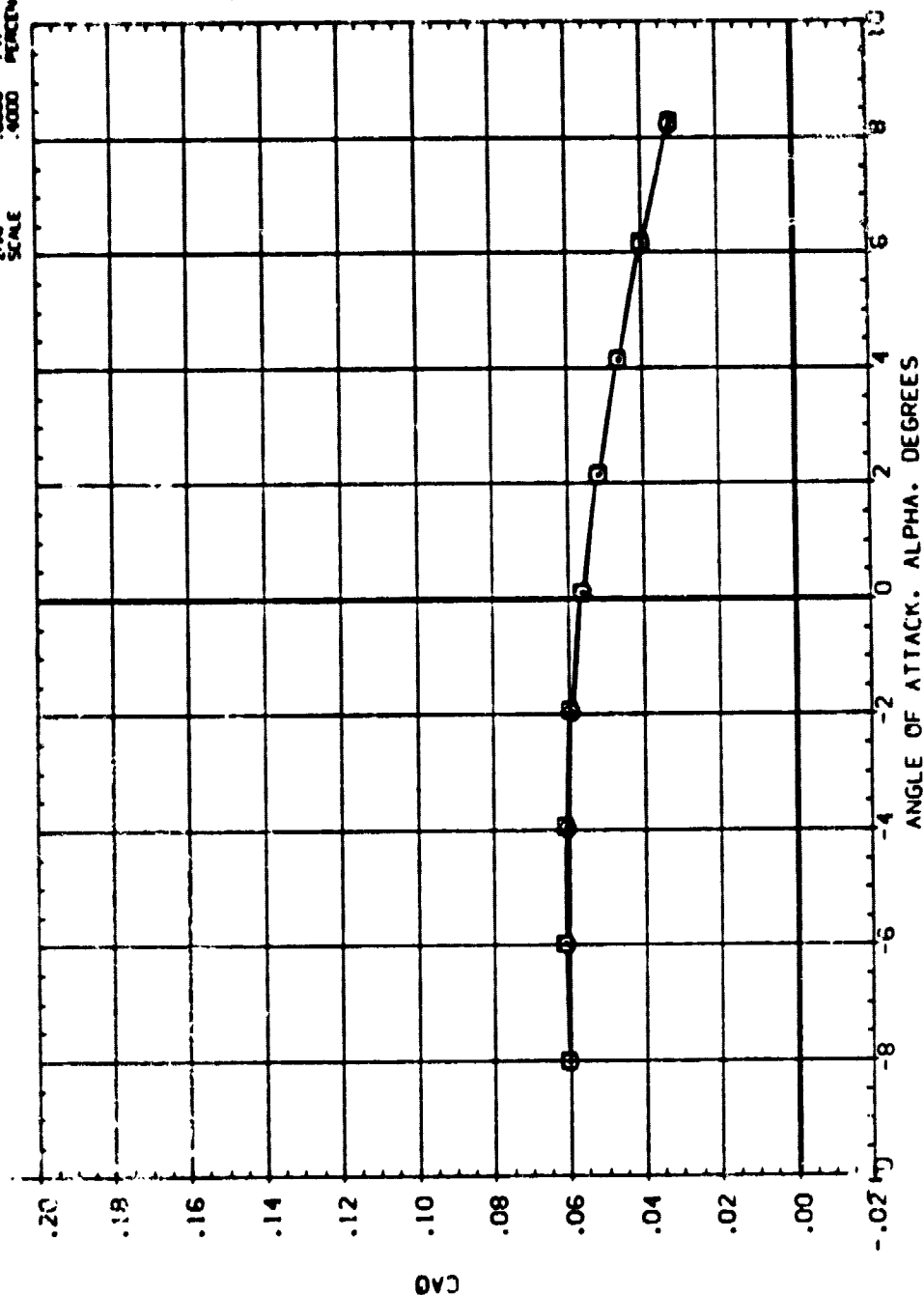


EFFECT OF REYNOLDS NUMBER

(G)MACH = 1.25

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: 8
 PAGE: 101 658. CONF 16: 02022001153
 PAGE: 101 658. CONF 16: 02022001153

REFERENCE INFORMATION
 SET: 8.1280 IN.
 LIFT: 5.1612 IN.
 DRAG: 3.7470 IN.
 YAW: 2.7120 IN.
 ROLL: .0000 IN.
 SCALE: .0000 PERCENT

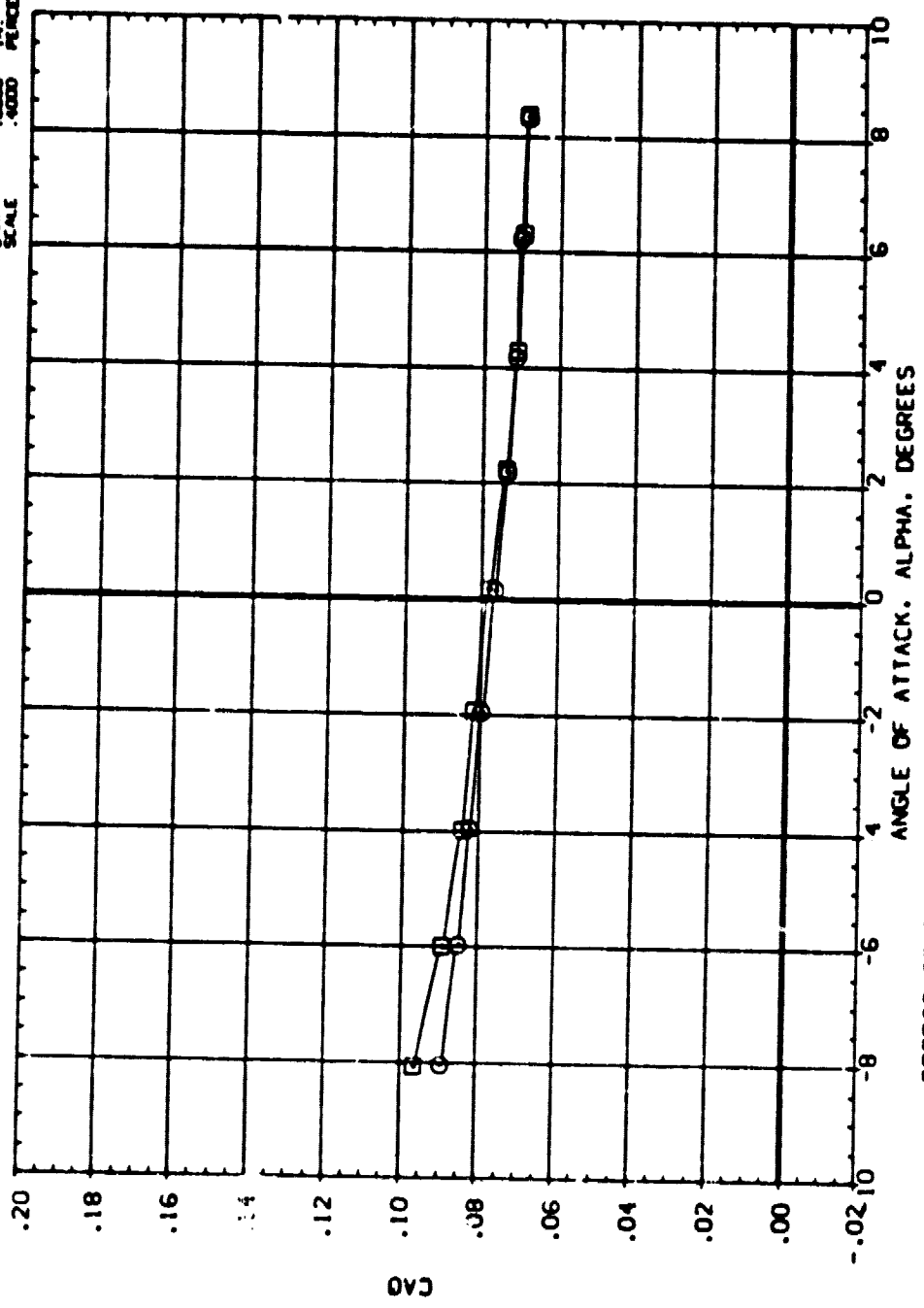


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2014) □ FA20: M5C TVT 655. CONF 16. GVZ220PHAT1353
 (FA2014) □ FA20: M5C TVT 655. CONF 16. GVZ220PHAT1353

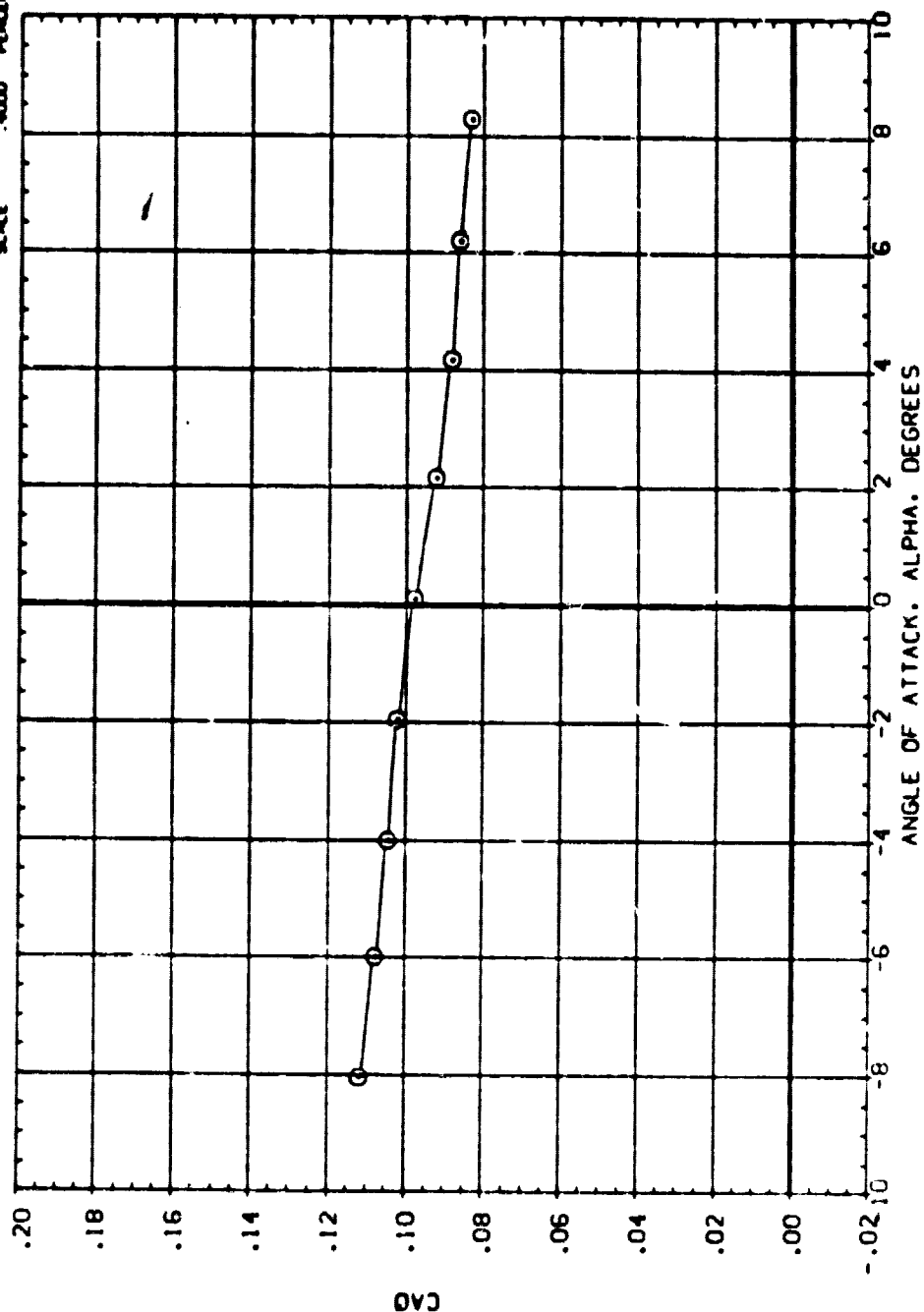
REFERENCE INFORMATION
 DWT 6.1380 IN.
 LWT 3.1612 IN.
 BWT 3.7470 IN.
 SWP 2.7130 IN.
 TWP .0000 IN.
 SCALE .0000 PERIN



EFFECT OF REYNOLDS NUMBER
 (B)MACH = .90

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA20. MSC TWT 656. CONFIG. 02VZ22PAA11353
 (FA20B) DATA NOT AVAILABLE
 (FA2016)

REFERENCE INFORMATION
 SER: 8.1780 30. IN
 LOT: 8.1612 IN.
 MAT: 3.3470 IN.
 WTP: 2.7120 IN.
 WTP: .0000 IN.
 SCALE: .4000 PERCENT

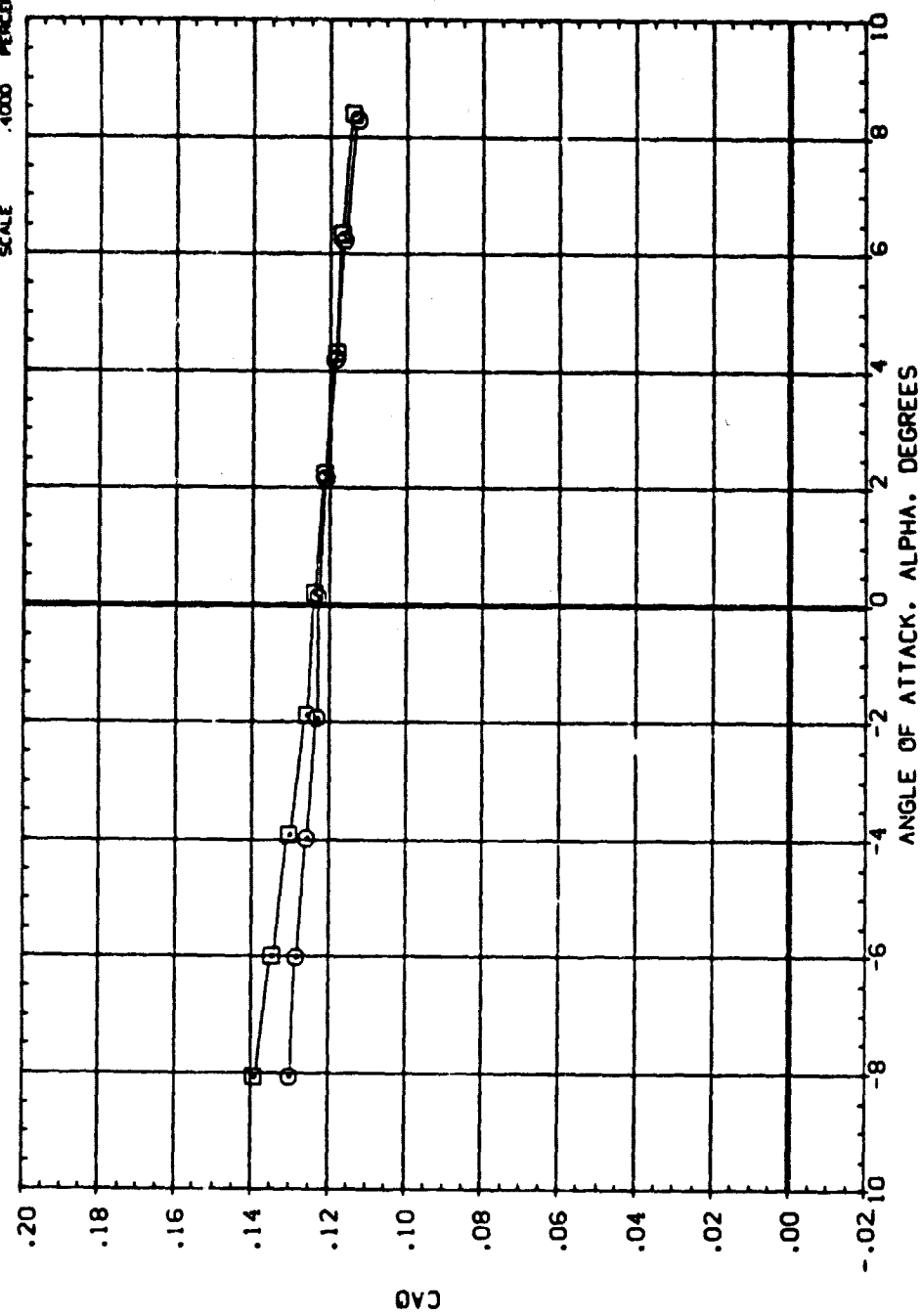


EFFECT OF REYNOLDS NUMBER

(C)MACH = .95

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2808) □ FA28. MSFC TVT 856. CONF 16. 0202EPPAATT253
 (FA2814) □ FA28. MSFC TVT 856. CONF 16. 0202EPPAATT353

REFERENCE INFORMATION
 SREF 6.1980 IN
 LREF 5.1612 IN
 SREF 3.7470 IN
 SREF 2.7120 IN
 TREF .0000 IN
 ZREF .0000 IN
 SCALE 4000 PERCENT

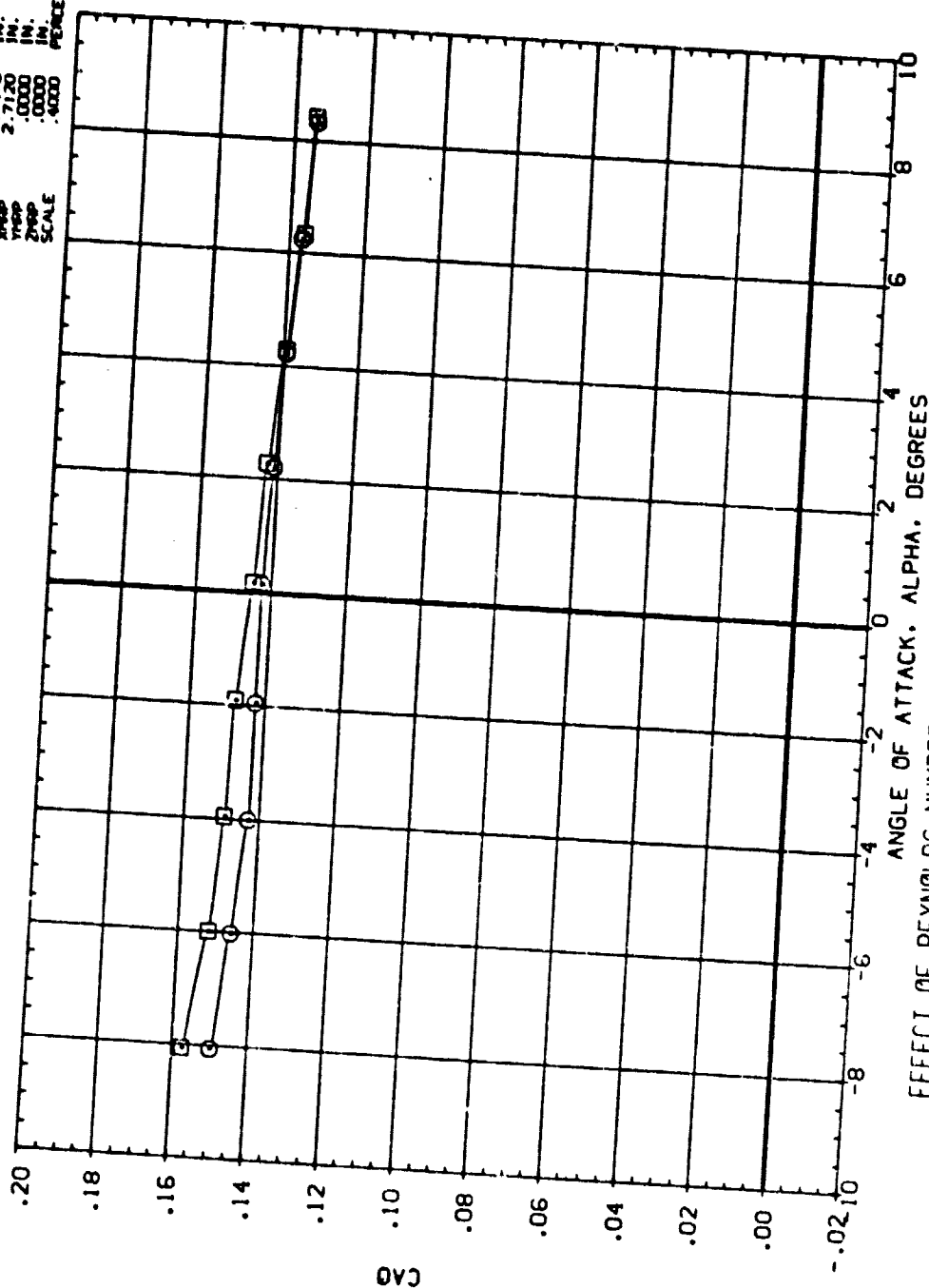


EFFECT OF REYNOLDS NUMBER

(0)MACH = 1.05

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2808) 8 FA28. MSC TWT 656. CONF IG. 02VZ28PATT753
 (FA2814) FA28. MSC TWT 656. CONF IG. 02VZ28PATT753

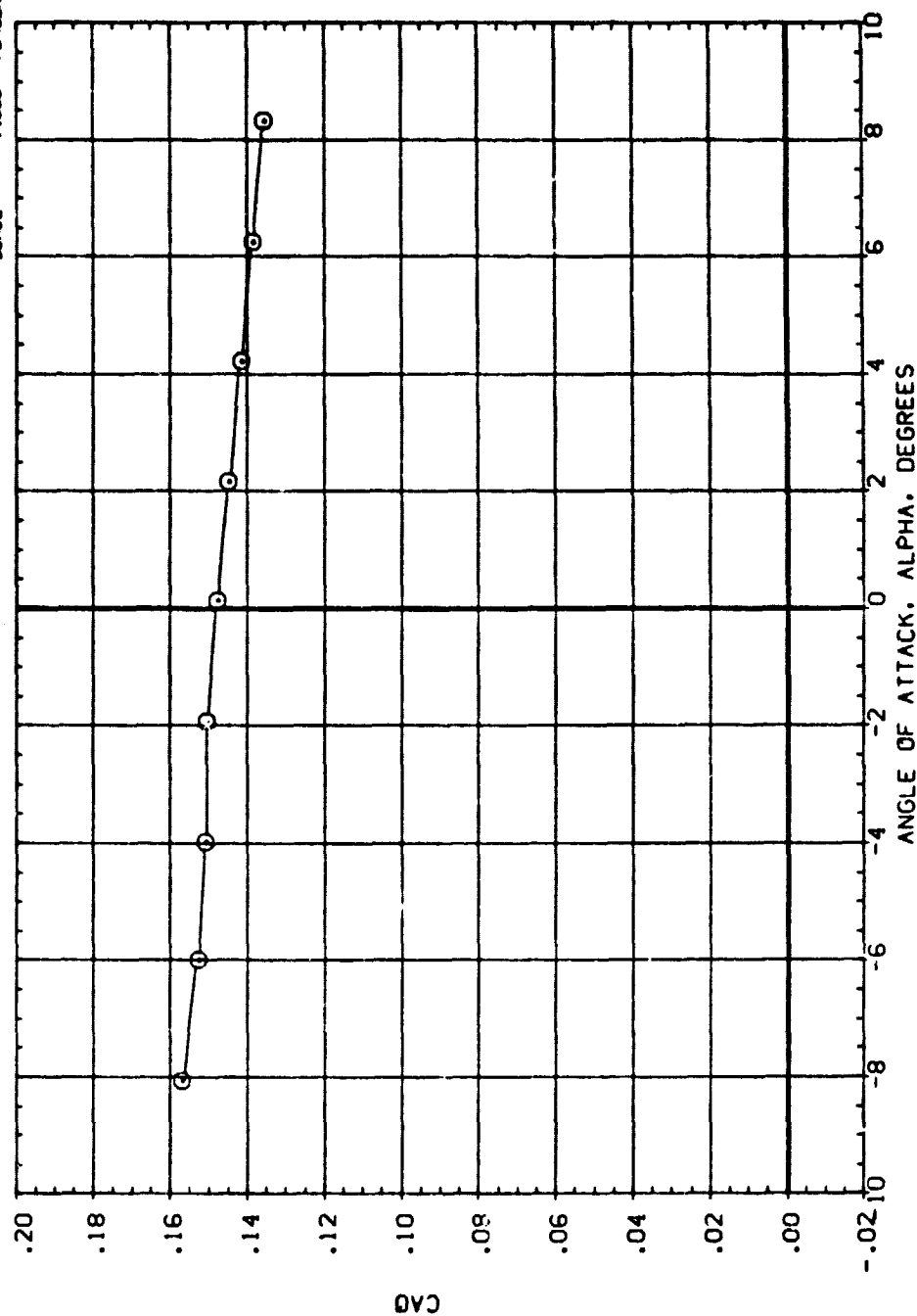
REFERENCE INFORMATION
 SREF 6.1980 90. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



EFFECT OF REYNOLDS NUMBER
 (E)MACH = 1.10

DATA SET SYMBOL: FA28. MSC. TVT 656. CONF 16. 02VZ28PAAT1353
 (FA2814) DATA NOT AVAILABLE

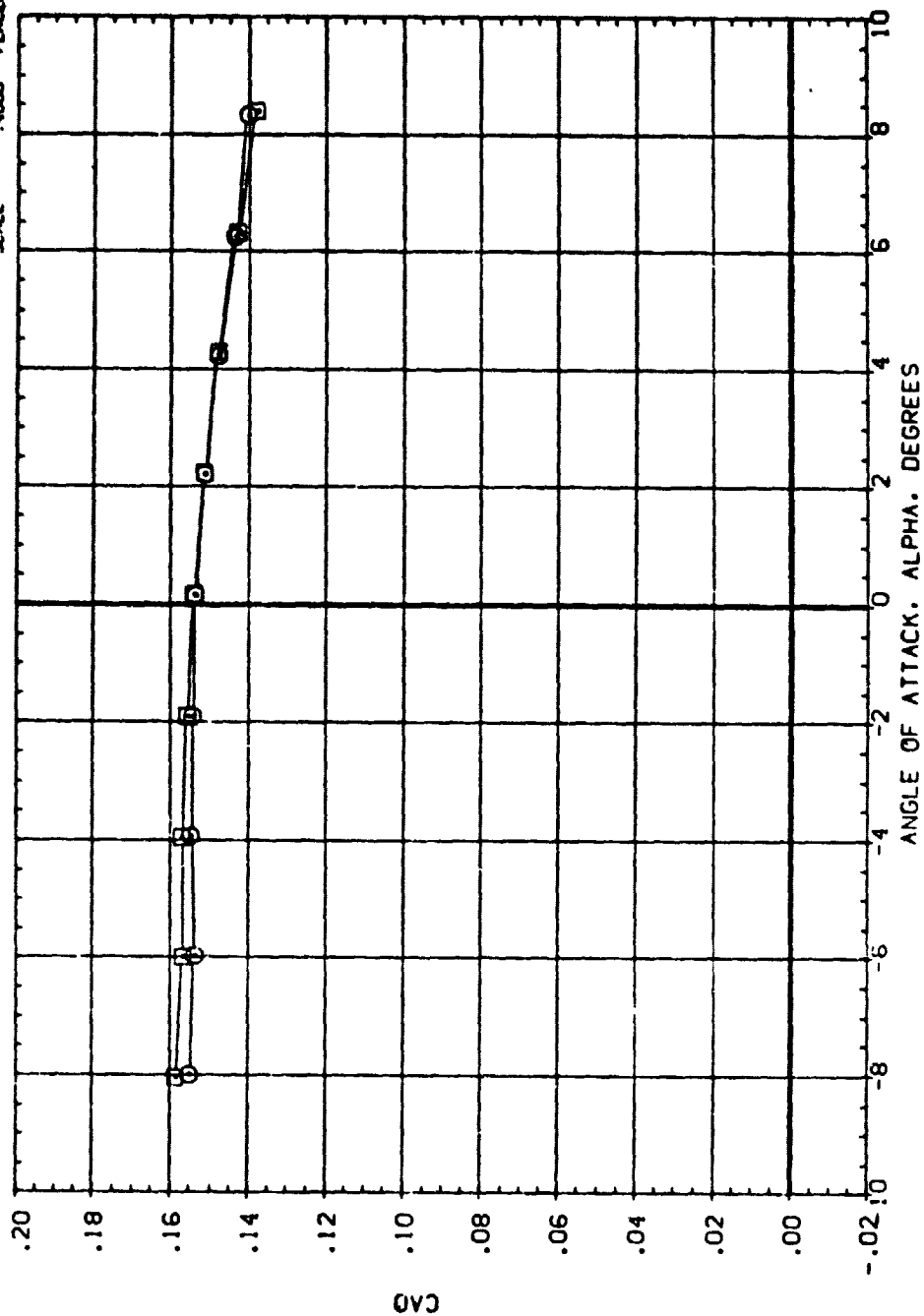
REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.1470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF REYNOLDS NUMBER

(F)MACH = 1.15

REFERENCE INFORMATION	
QREF	5.1980 IN.
LREF	5.1612 IN.
BREF	3.7470 IN.
WREF	2.7120 IN.
VREF	.0000 IN.
ZREF	.0000 IN.
SCALE	.0000 PERCENT

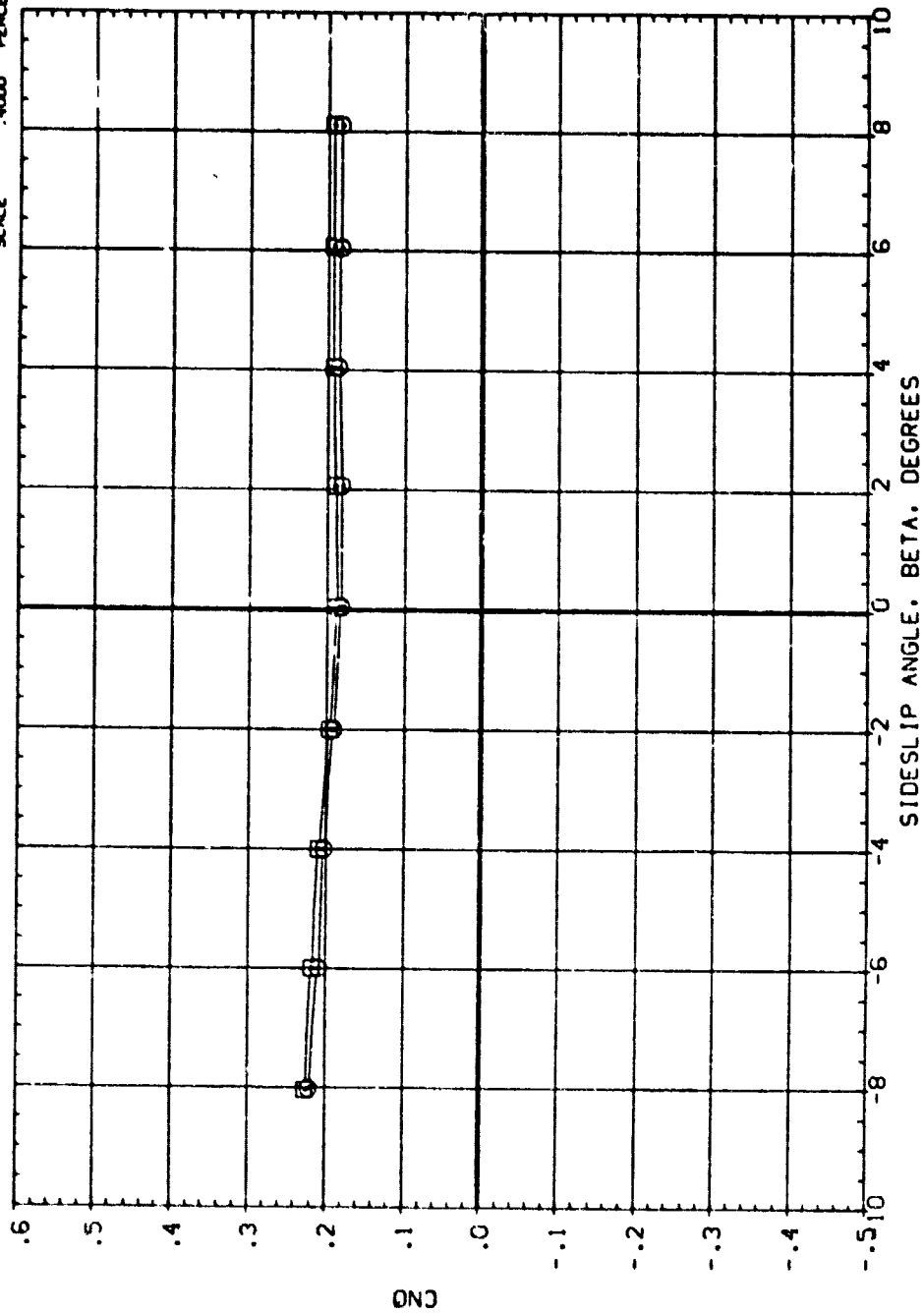


EFFECT OF REYNOLDS NUMBER

$$(G)_{MACH} = 1.25$$

DATA SET SYMBOL: **□** CONFIGURATION DESCRIPTION:
 (FA2809) FA28. MSFC INT 656. CONF 1G. 02M3E2M0PATT1353
 (FA2815) FA28. MSFC INT 656. CONF 1G. 02M3E2M0PATT1353

REFERENCE INFORMATION
 SREF 6.1560 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

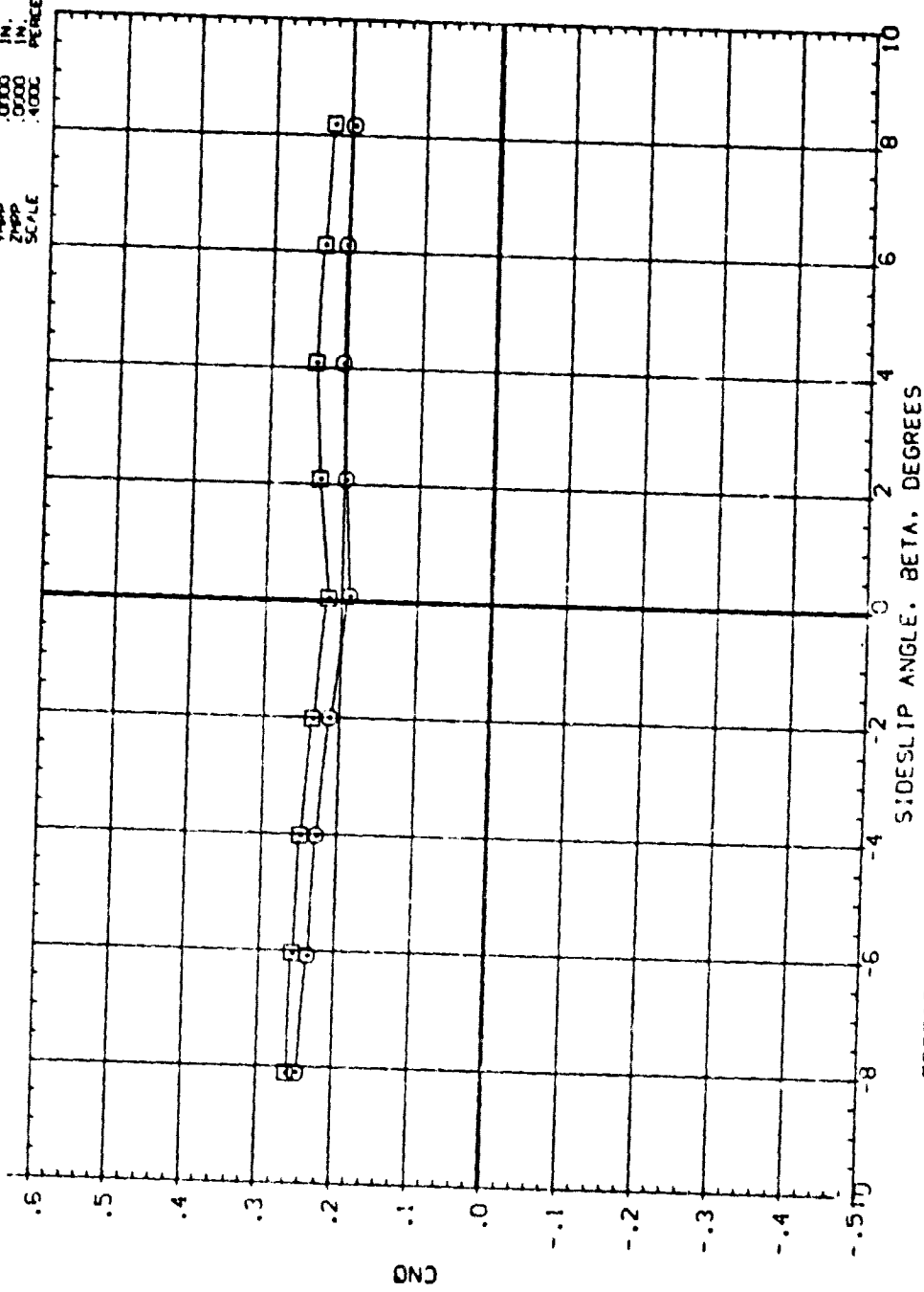


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

DATA SET SYMBOL: B
 CONFIGURATION DESCRIPTION: FA28, MISC TUT 556, CONFIG. 0202E200AATT353
 (FA2815)

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 AREF 2.7120 IN.
 WREF .0700 IN.
 ZREF .0700 IN.
 SCALE .0001 PERCENT

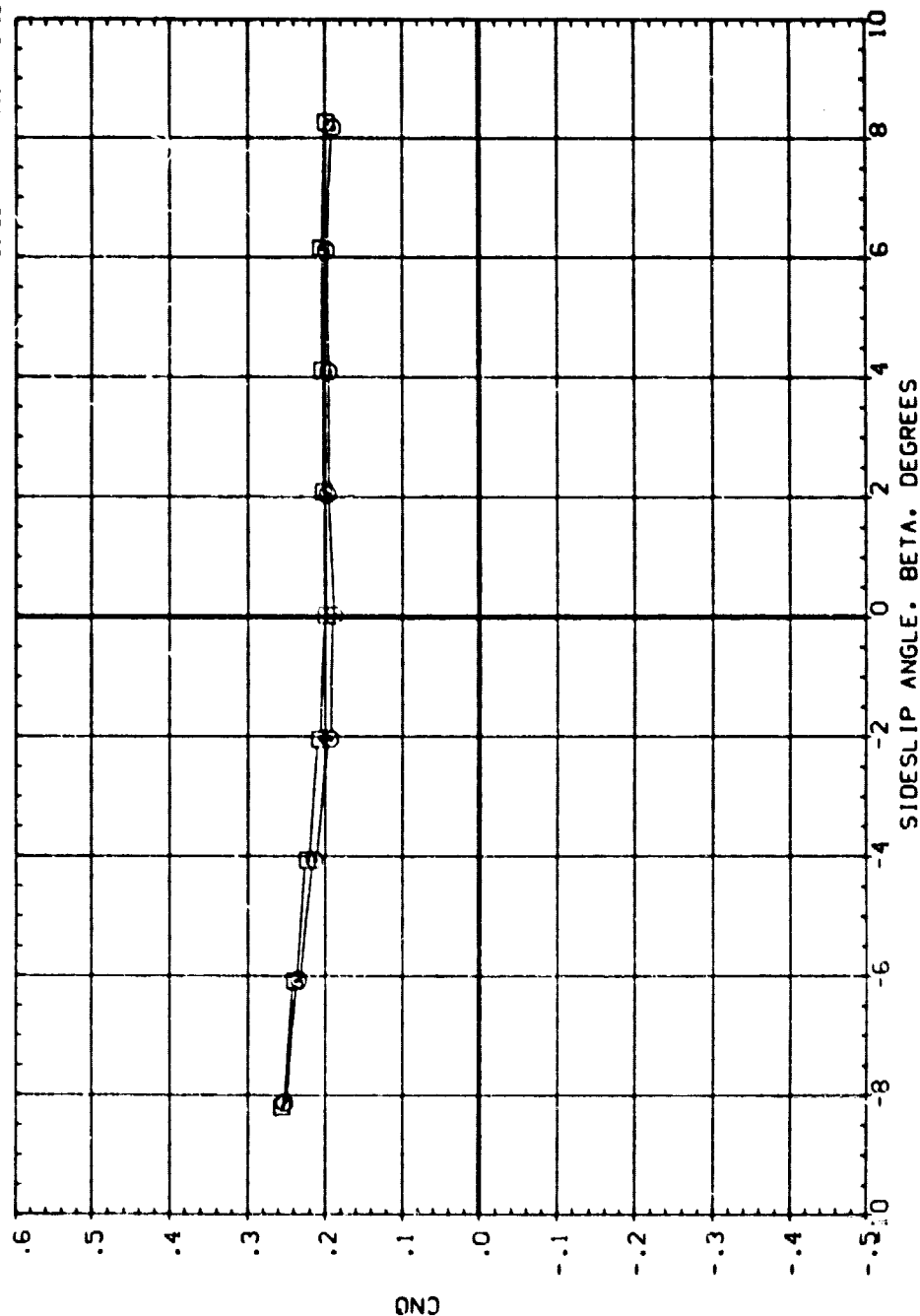


EFFECT OF REYNOLDS NUMBER

(B)MACH = .90

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION:
 (FA2809) FA28. MSFC TWT 656. CONF IG. 02NZE 20PA11253
 (FA2815) FA28. MSFC TWT 656. CONF IG. 02NZE 20PA11253

REFERENCE INFORMATION:
 SREF 6.1880 IN.
 LREF 3.1612 IN.
 BREF 3.7170 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

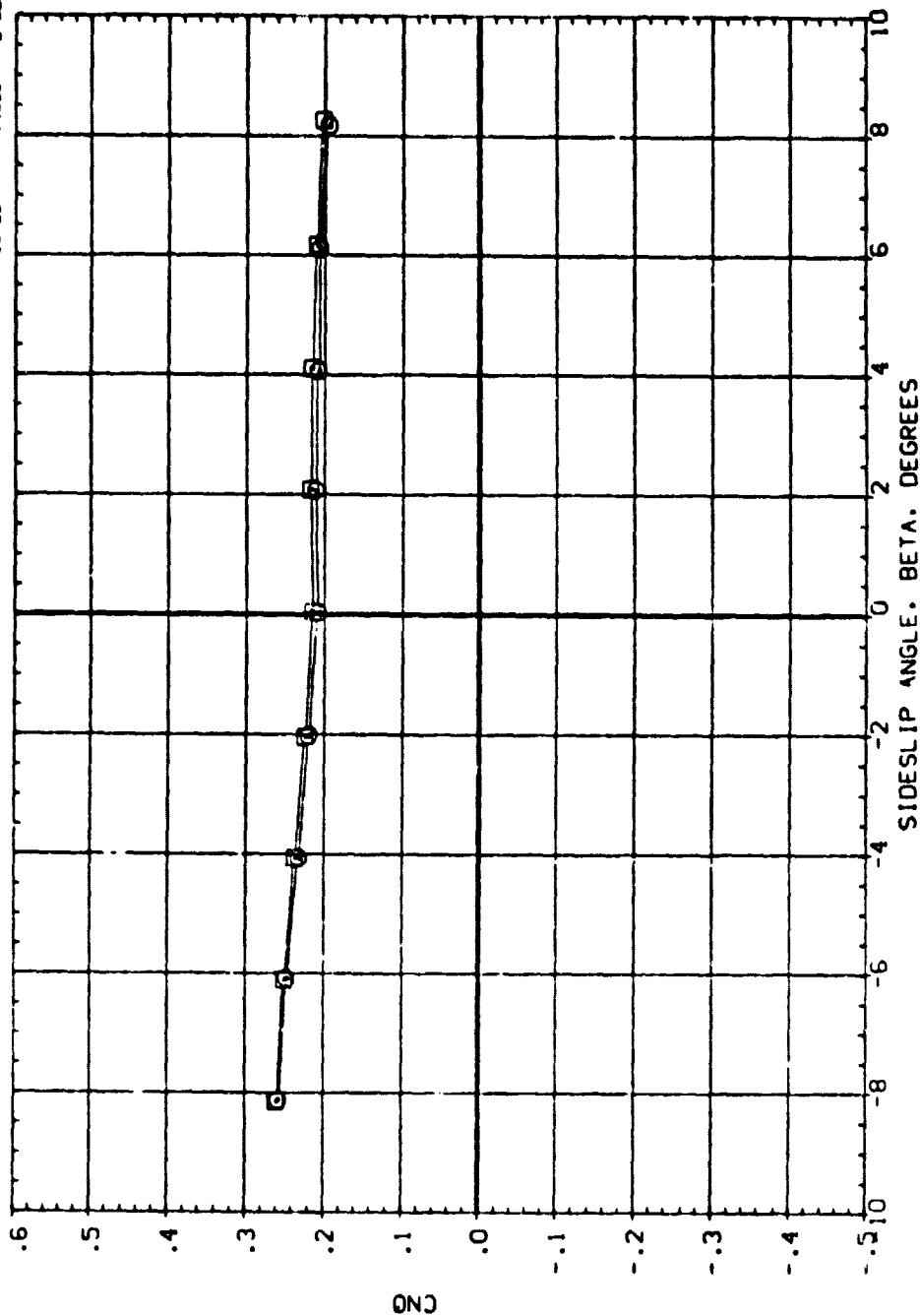


EFFECT OF REYNOLDS NUMBER

(C)MACH = 1.05

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION:
 (FA2809) FA28: MSFC TWT 656: CONF 10: 02NZE2M0A11253
 (FA2815) FA28: MSFC TWT 656: CONF 10: 02NZE2M0A11253

REFERENCE INFORMATION:
 SPEC 6.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT

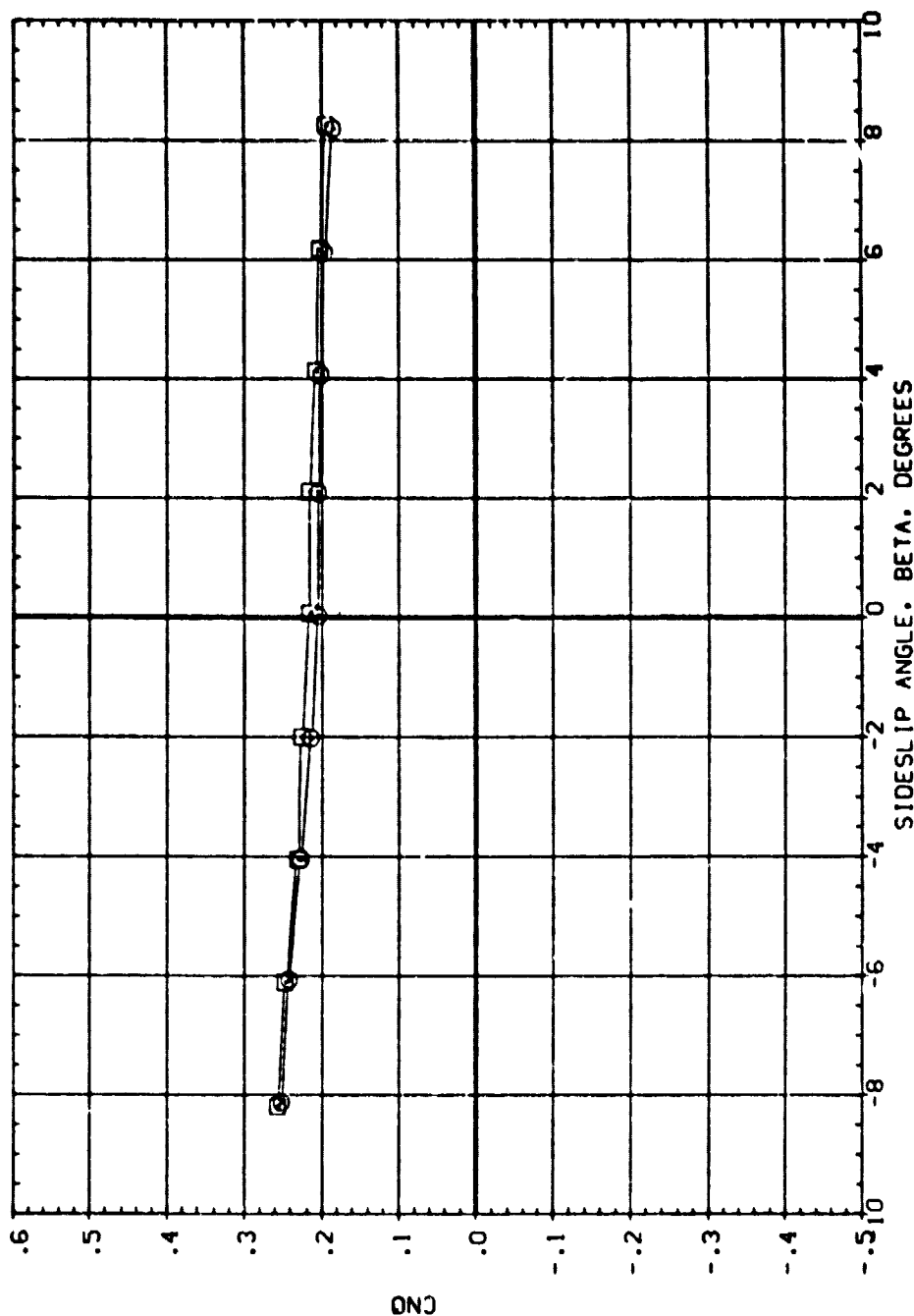


EFFECT OF REYNOLDS NUMBER

(D)MACH = 1.10

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION: FA28: MSC TWT 656: CONF IG: ONZE23PAATT353
 (FA2009) (FA2015)

REFERENCE INFORMATION: SREF: 6.1590 IN: SQ: IN: LINEF: 5.1611 IN: XREF: 3.7470 IN: XREF: 2.7120 IN: YREF: .0000 IN: ZREF: .0000 IN: SCALE: .4300 PERCENT



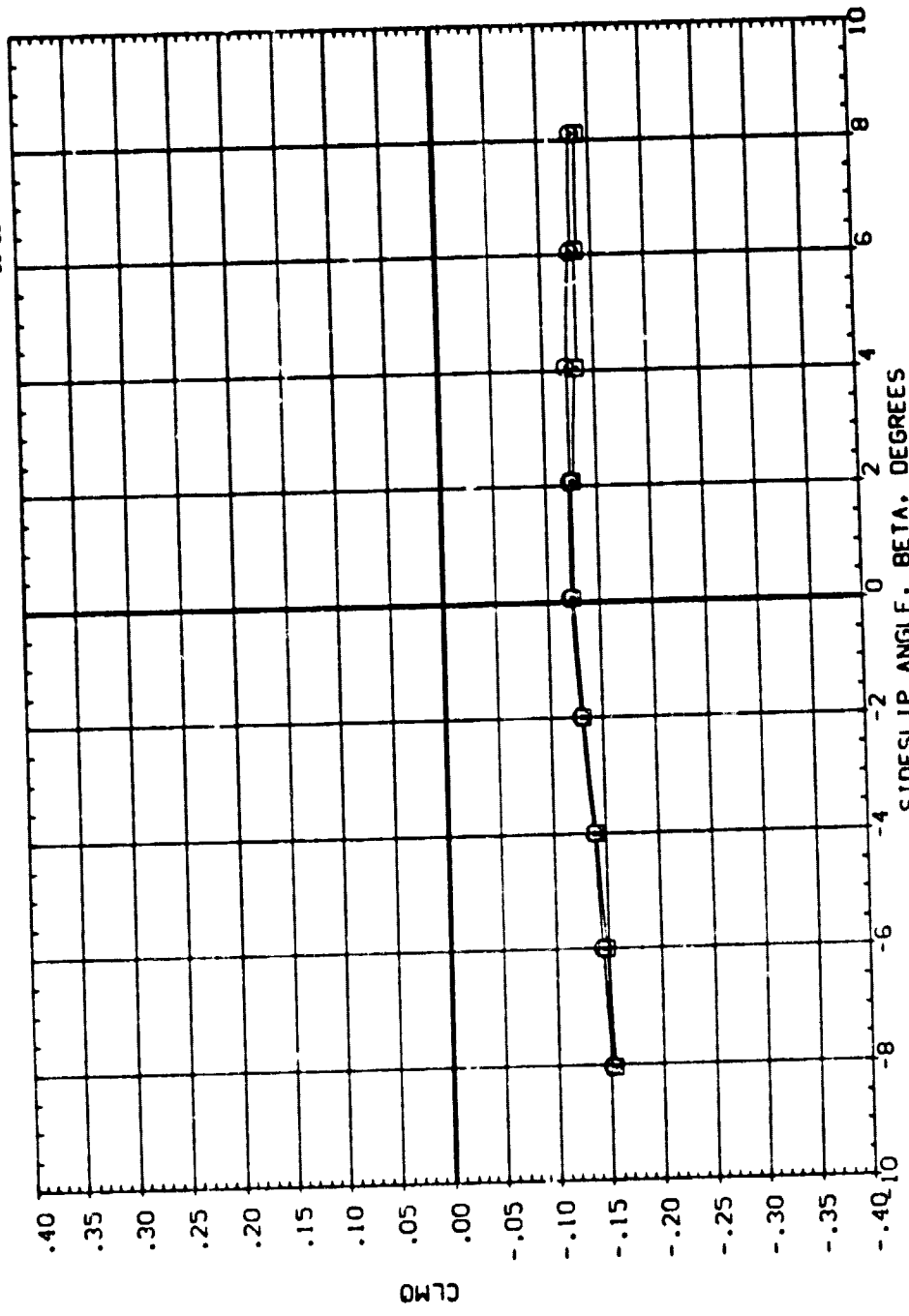
EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.25

DATA SET SYMBOL: **B**
 (FA2809)
 (FA2815)

CONFIGURATION DESCRIPTION
 FA28. MSFC TWT 656. CONF IG. 02VZ2P0P0A11353
 FA28. MSFC TWT 656. CONF IG. 02VZ2P0P0A11353

REFERENCE INFORMATION
 SREF 6.1800 SQ. IN.
 LREF 3.1612 IN.
 BREF 3.7120 IN.
 AREF 2.7120 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

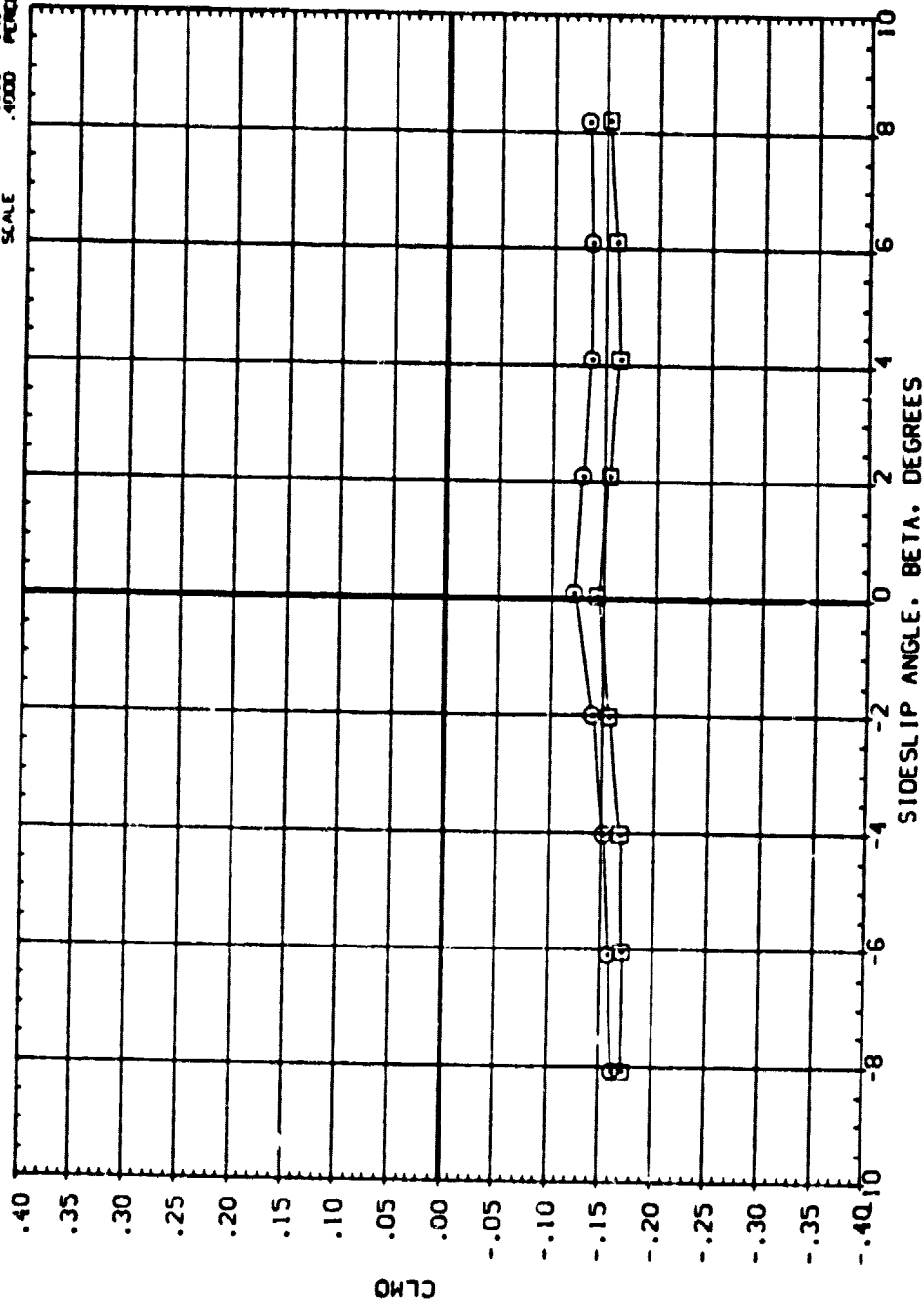


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

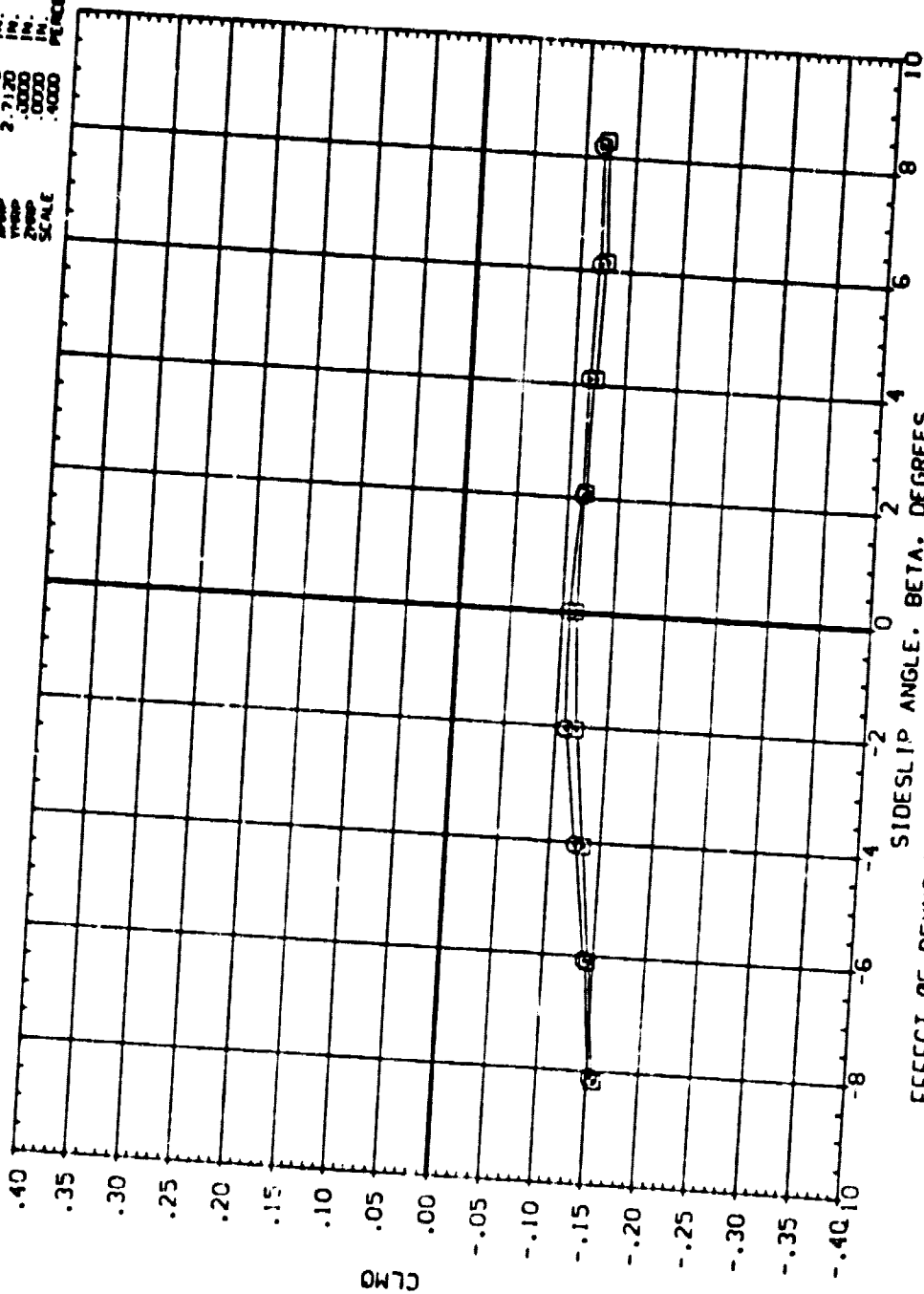
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	
(FA2809)	FA28. MSFC TWT 656. CONFIG.	02NZE20PMATT353
(FA2815)	FA28. MSFC TWT 656. CONFIG.	02NZE20PMATT353

REFERENCE INFORMATION	
SREF	6.1980 SO. IN
LREF	5.1612 IN.
BREF	3.7470 IN.
WREF	2.7120 IN.
VREF	.0000 IN.
ZREF	.0000 IN.
SCALE	.0000 PERCENT



DATA SET SYMBOL: CONF'GURATION DESCRIPTION
 (FA2809) B FIC TWT 656. CONF'G. OZVEZMPAAT1353
 (FA2815) FIC TWT 656. CONF'G. OZVEZMPAAT1353

REFERENCE INFORMATION
 SREF 6.1580 90. IN
 LREF 5.1612 100. IN
 BREF 3.7470 100. IN
 WREF 2.7120 100. IN
 YREF .0000 100. IN
 ZREF .0000 100. IN
 SCALE .0000 PERCENT

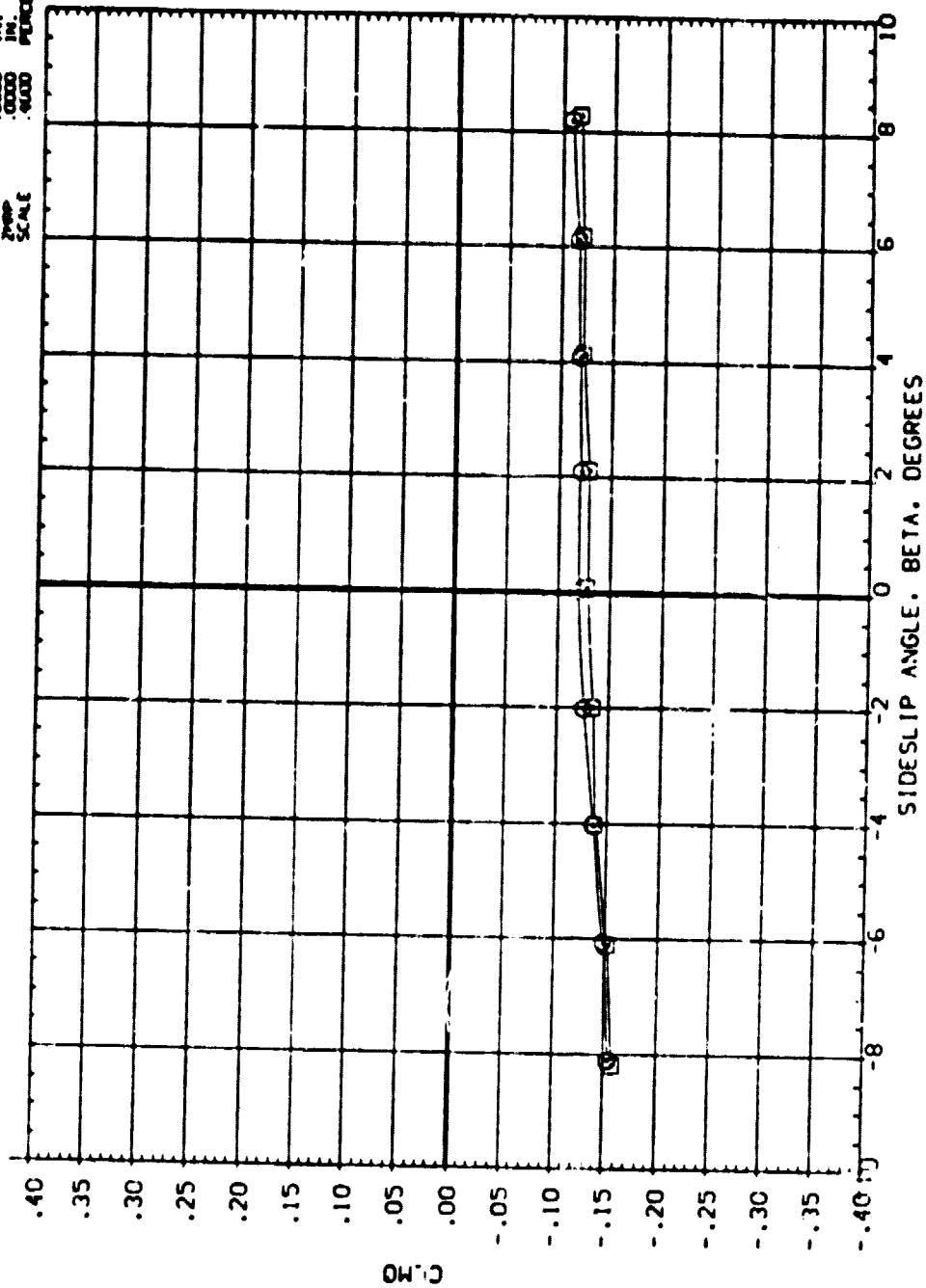


EFFECT OF REYNOLDS NUMBER

(C)MACH = 1.05

DATA SET SYMBOL: 0
 CONFIGURATION DESCRIPTION: FA28. MISC. TWT 656. COF. 10. SIDEZ. PROPERTIES
 1FA28031 0 FA28. MISC. TWT 656. COF. 10. SIDEZ. PROPERTIES
 1FA28031 0

REFERENCE INFORMATION
 SKEW 6.1580 IN.
 LIFT 5.1612 IN.
 SKEW 3.7470 IN.
 TWT 2.7120 IN.
 TWT 0.0000 IN.
 TWT 0.0000 IN.
 SCALE 4.000 PERIOD

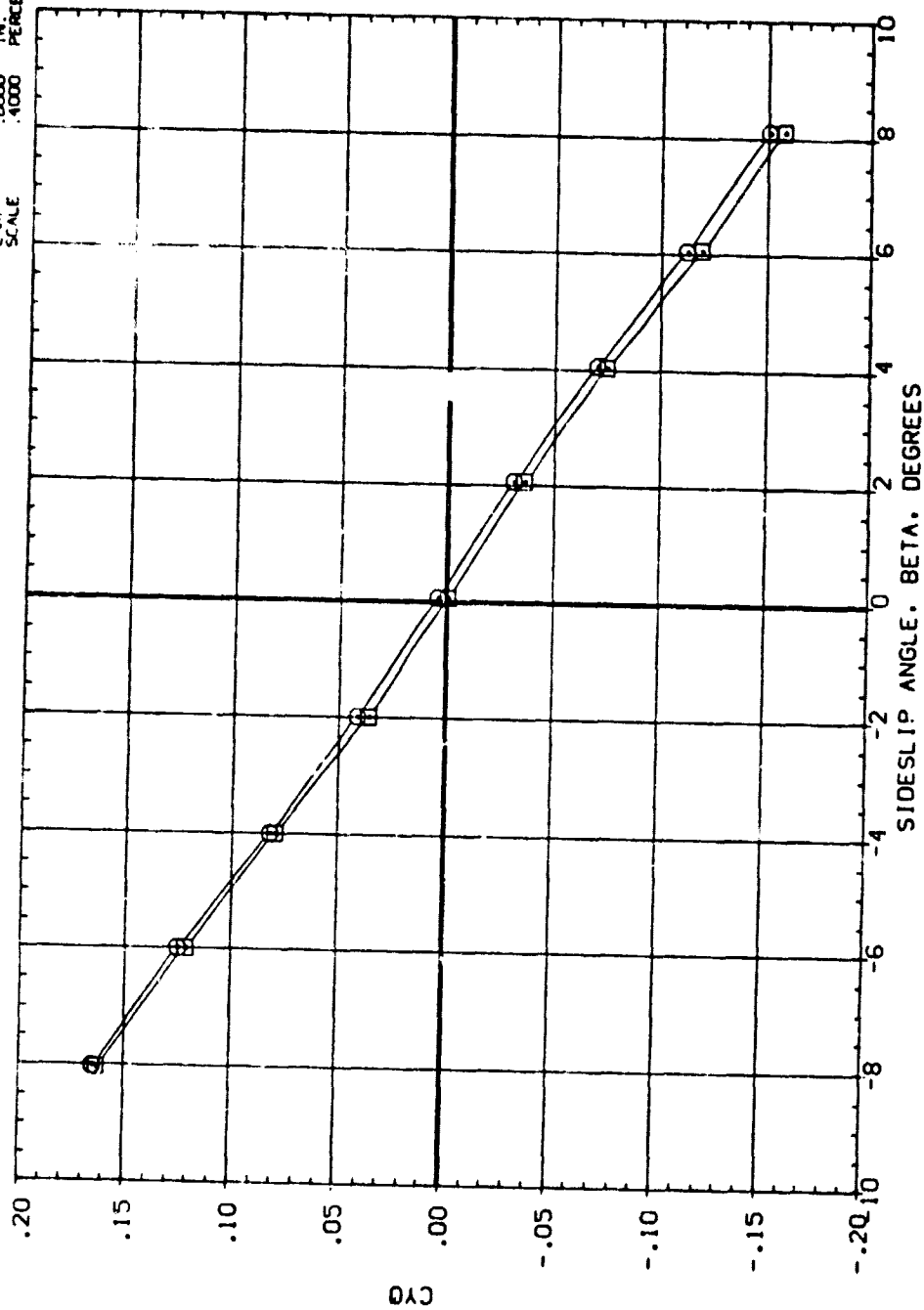


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.25

DATA SET SYMBOL: B
 CONFIGURATION DESCRIPTION:
 FA28, MSFC TW 656, CONF 1G, 0202E204PAATT353
 (FA2815) FA28, MSFC TW 656, CONF 1G, 0202E204PAATT353

REFERENCE INFORMATION:
 SREF 5.1880 IN.
 LREF 3.1672 IN.
 BREF 2.7120 IN.
 XMRP .0000 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

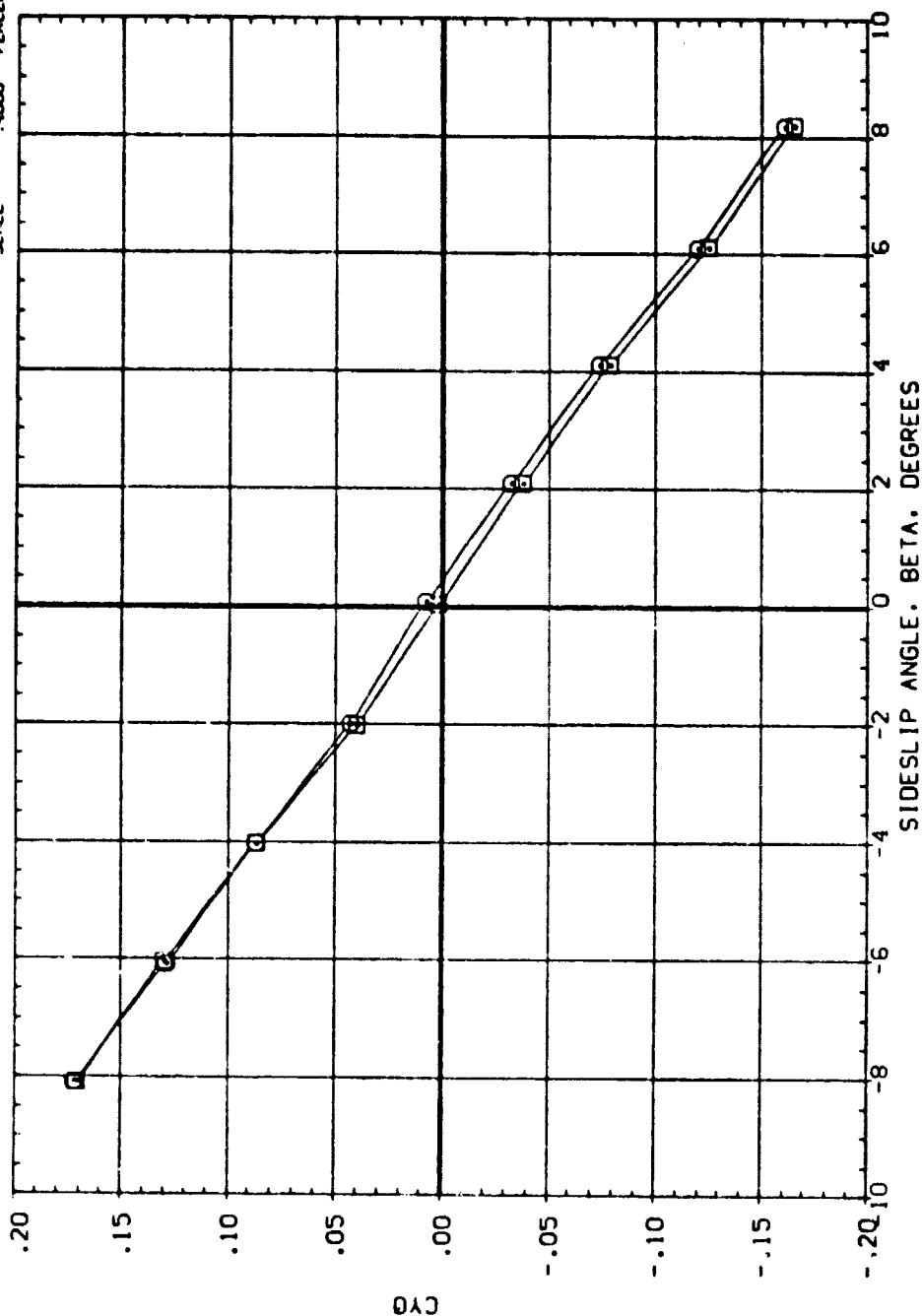


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) FA28. MSFC TVT 656. CONF IG. 03N2E20NPAATT353
 (FA2815) FA28. MSFC TVT 656. CONF IG. 03N2E20NPAATT353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XPROP 2.7120 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF REYNOLDS NUMBER

(B)MACH = .90

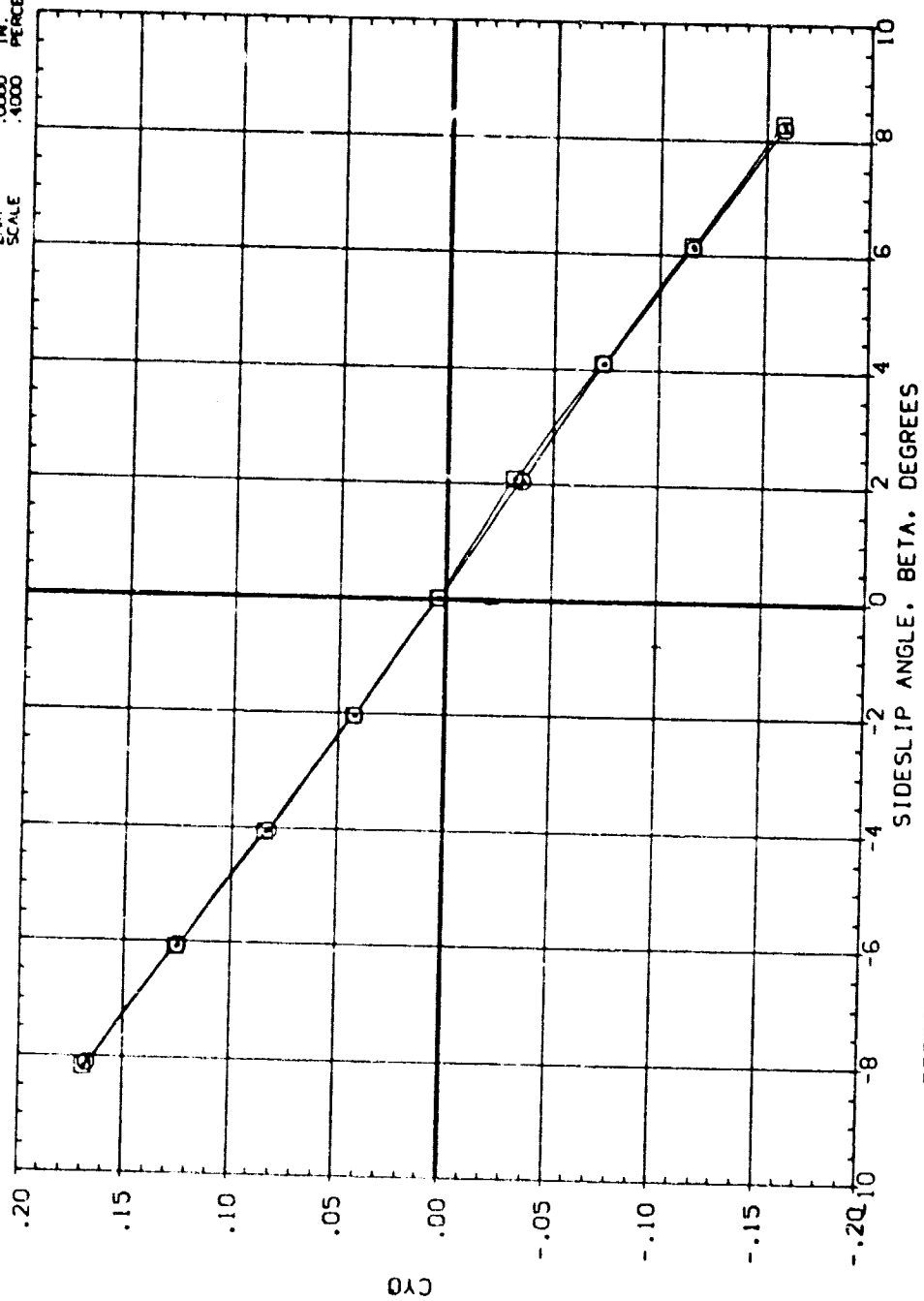
DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FA2803) FA28. MSFC TWT 656. CONF 16. 02VZL2P0AATTJ53

(FA2815) FA28. MSFC TWT 656. CONF 15. 02VZL2P0AATTJ53

REFERENCE INFORMATION

SREF	5.1580	SO. IN
LREF	5.1612	IN.
BREF	2.7170	IN.
XMRP	2.7120	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.4000	PERCENT

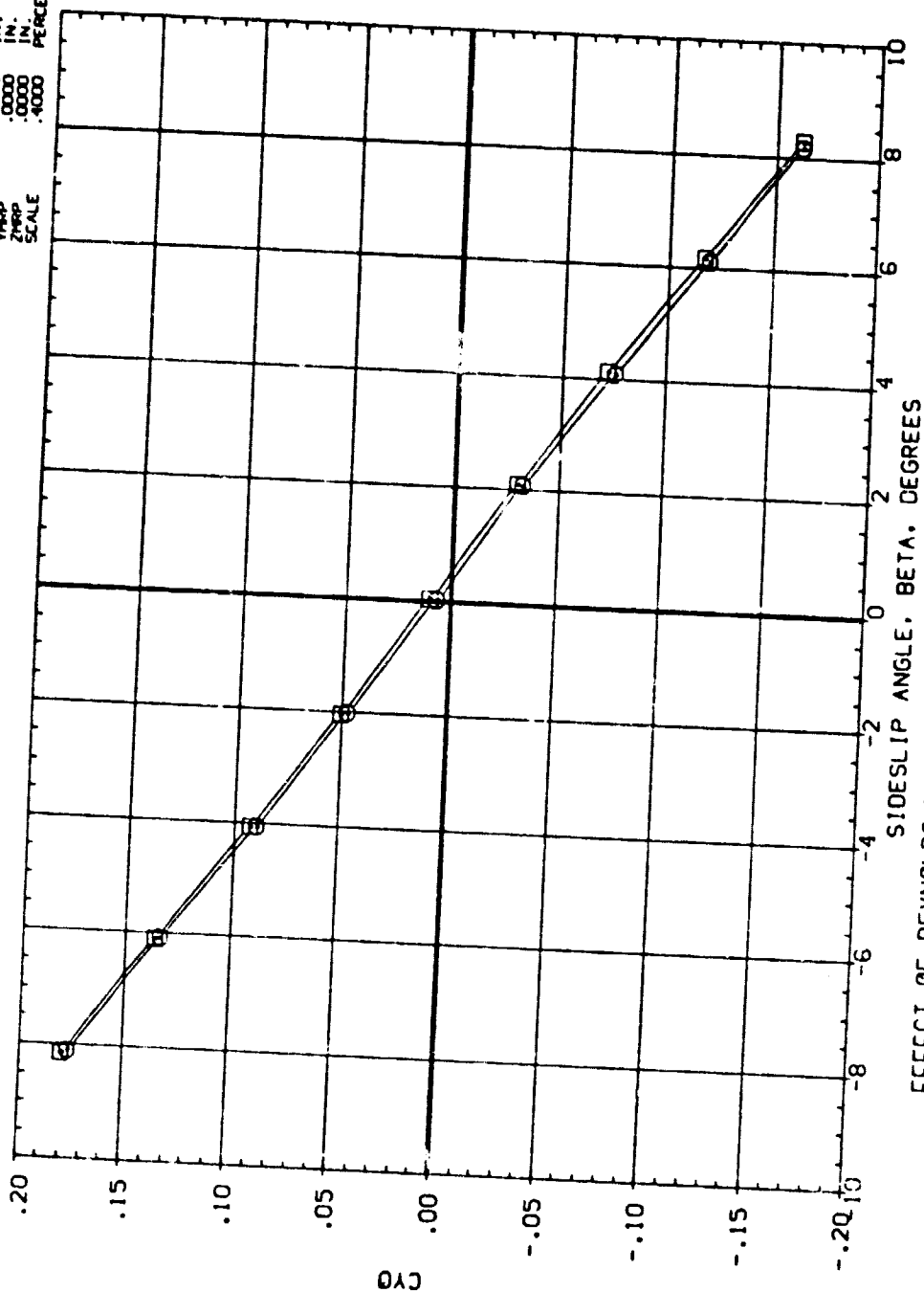


EFFECT OF REYNOLDS NUMBER

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) 9 FA28. MSC TWT 656. CONFIG. 02N2E20PATT1353
 (FA2815) 9 FA28. MSC TWT 656. CONFIG. 02N2E20PATT1353

REFERENCE INFORMATION
 SREF 6.1980 IN.
 SREF 5.1612 IN.
 SREF 3.7470 IN.
 VREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

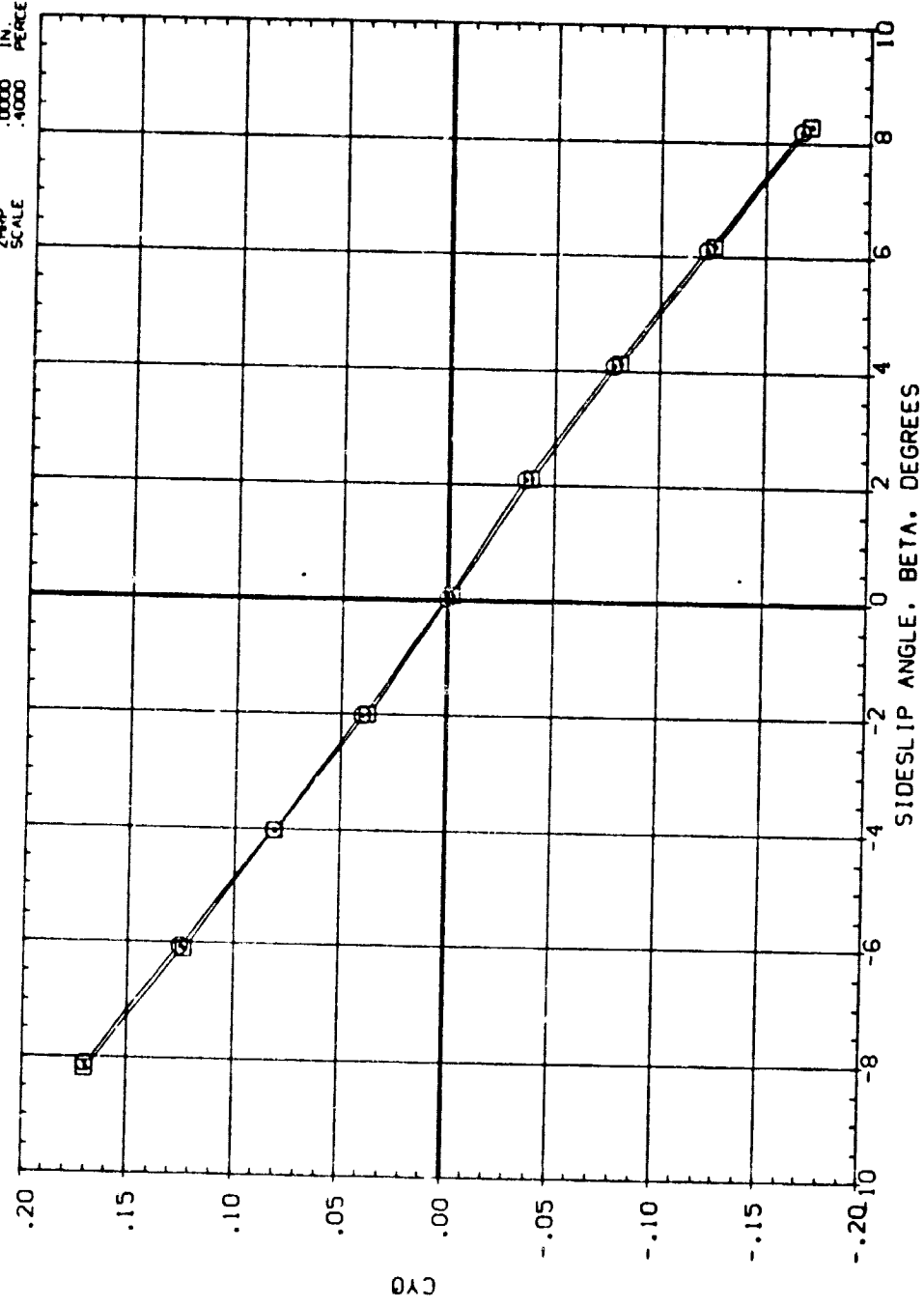


EFFECT OF REYNOLDS NUMBER

(O)MACH = 1.10


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) FA28. MSC TWT 656. CONF IG. 02NZE20PAATTJ53
 (FA2815) FA28. MSC TWT 656. CONF IG. 02NZE20PAATTJ53

REFERENCE INFORMATION:
 SREF 6.1580 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

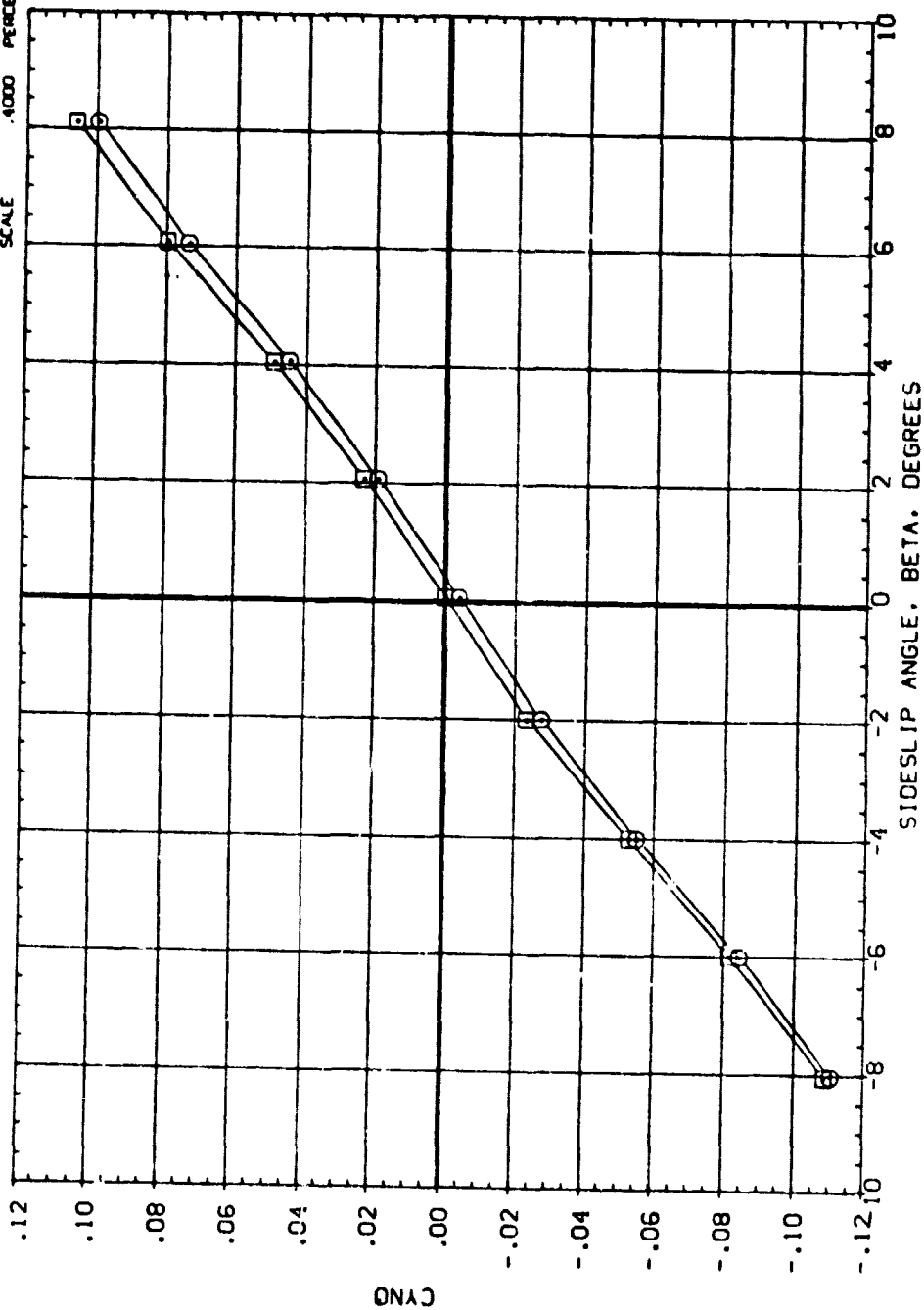


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.25

DATA SET SYMBOL: (FA2809)
 (FA2815)  CONFIGURATION DESCRIPTION
 FA28. MSFC TWT 656. CONF G. 02VZE2P4PAAT1353
 FA28. MSFC TWT 656. CONF G. 02VZE2P4PAAT1353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

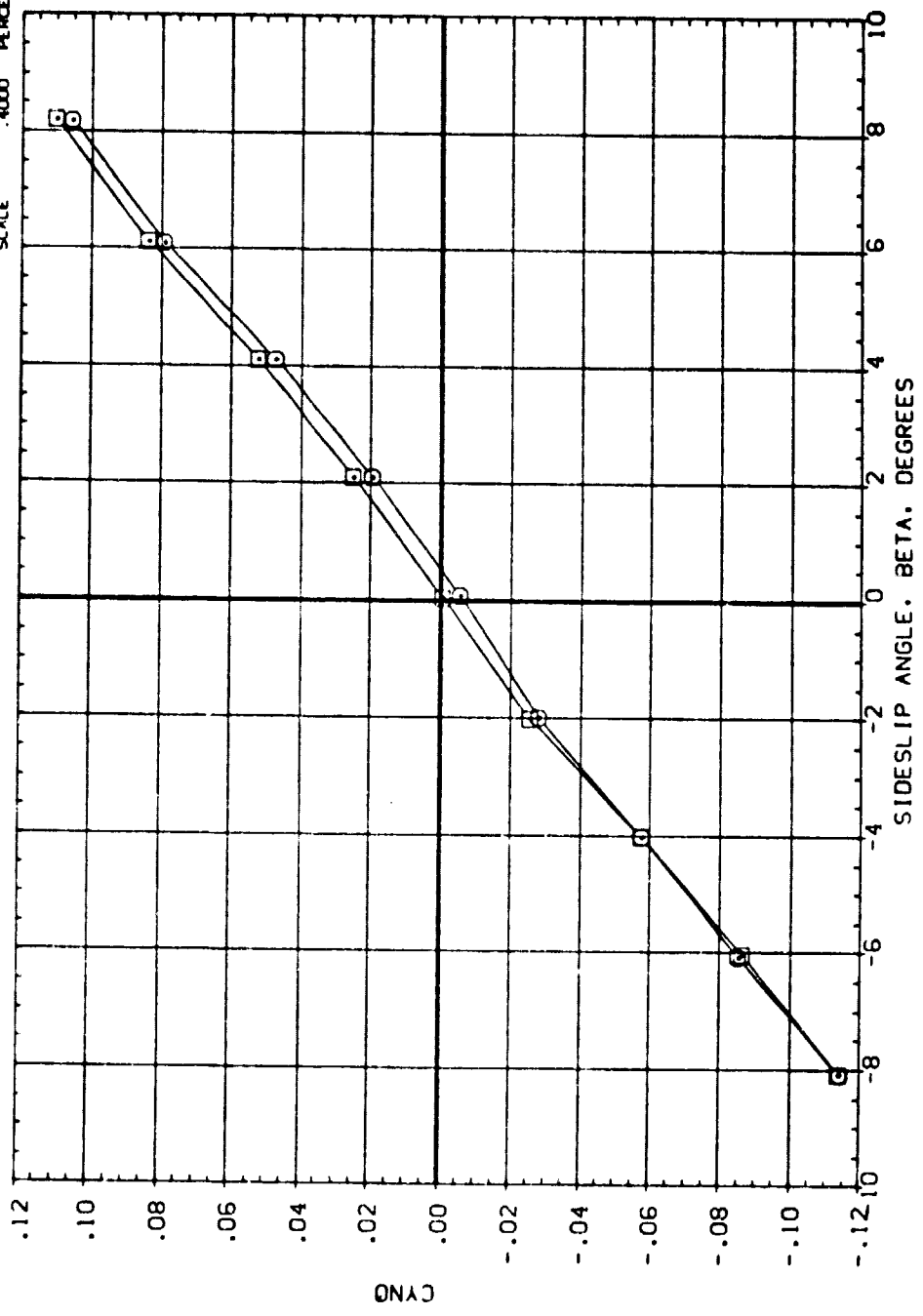


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2809) □ FA28. MSC TWT 656. CONF IG. 02NZE2NPAATTJ33
 (FA2815) □ FA28. MSC TWT 656. CONF IG. 02NZE2NPAATTJ33

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

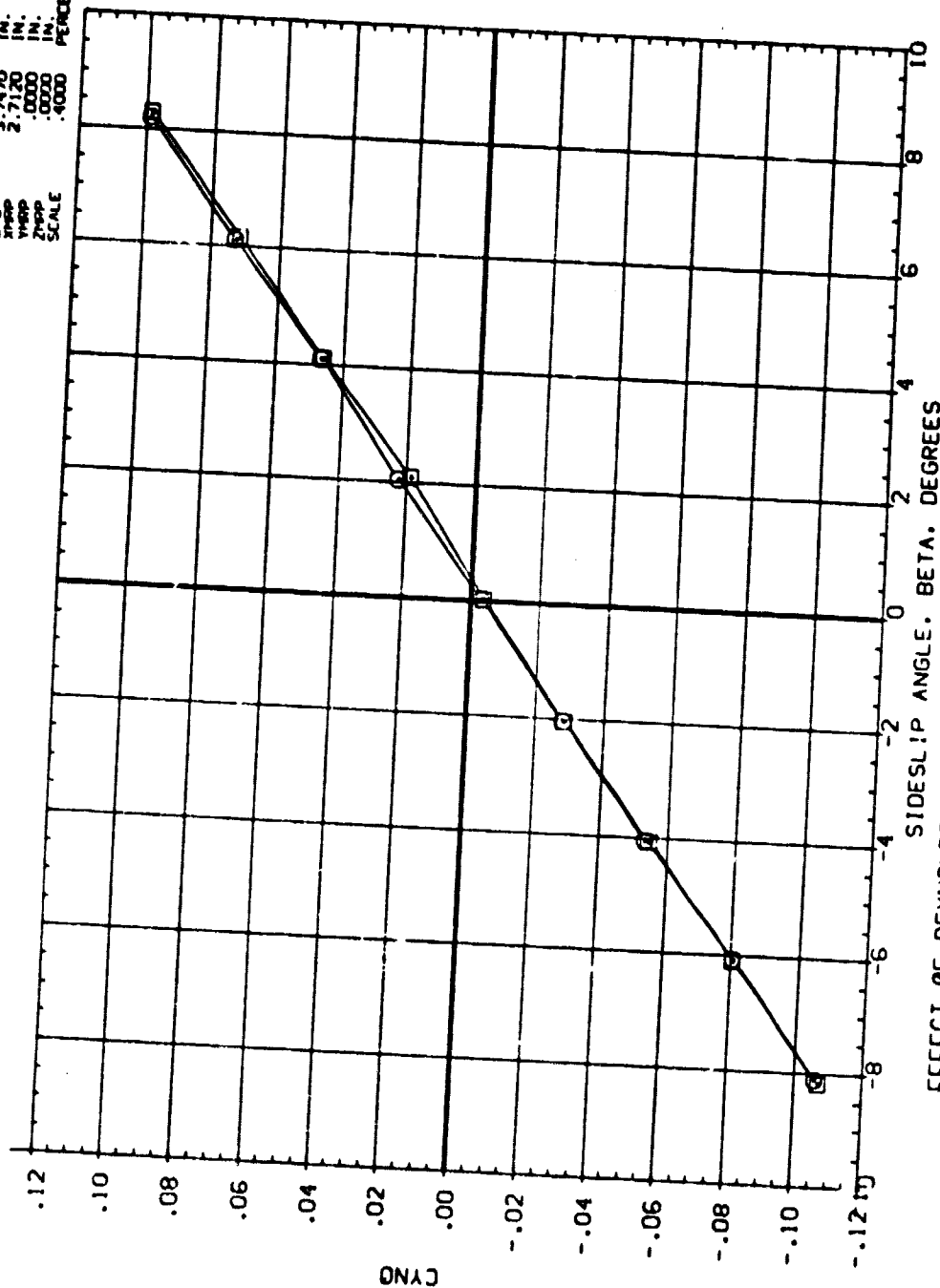


EFFECT OF REYNOLDS NUMBER

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2803) 8 FA28. MSFC TOT 656. CONFIG. 02N2E20NPAATT353
 (FA2815) 8 FA28. MSFC TOT 656. CONFIG. 02N2E20NPAATT353

REFERENCE INFORMATION
 SPEC 6.1580 50. IN
 LREF 5.1612 24. IN
 SREF 3.2470 12. IN
 VREF 2.7120 12. IN
 VPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .0000 PERCENT

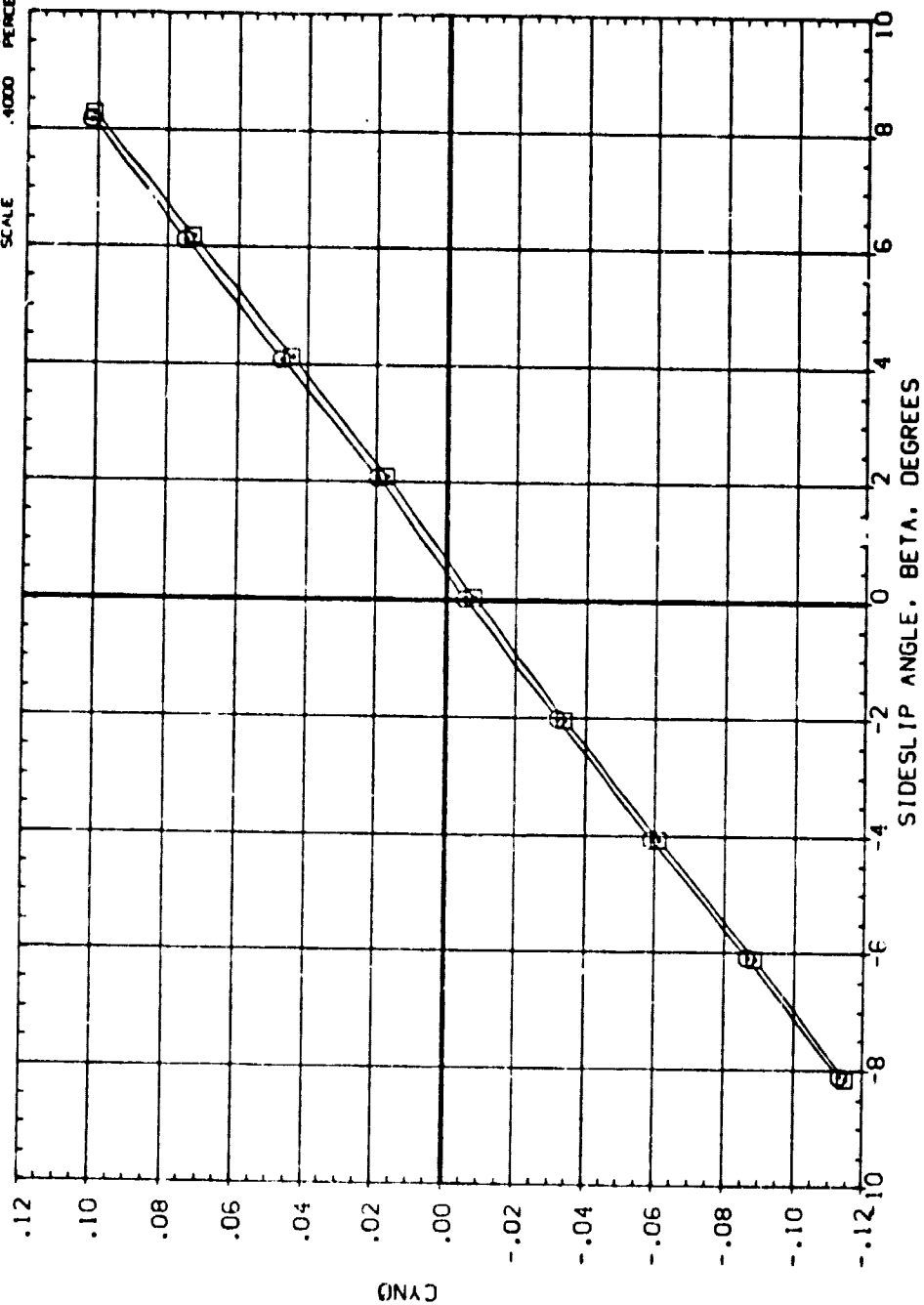


EFFECT OF REYNOLDS NUMBER

(C)MACH = 1.05

DATA SET SYMBOL: (FA2809) (FA2815) CONFIGURATION DESCRIPTION: FA28: MSC TVT 656: CONF IG: 02NZE2MPAA1T353 FA28: MSC TVT 656: CONF IG: 02NZE2MPAA1T353

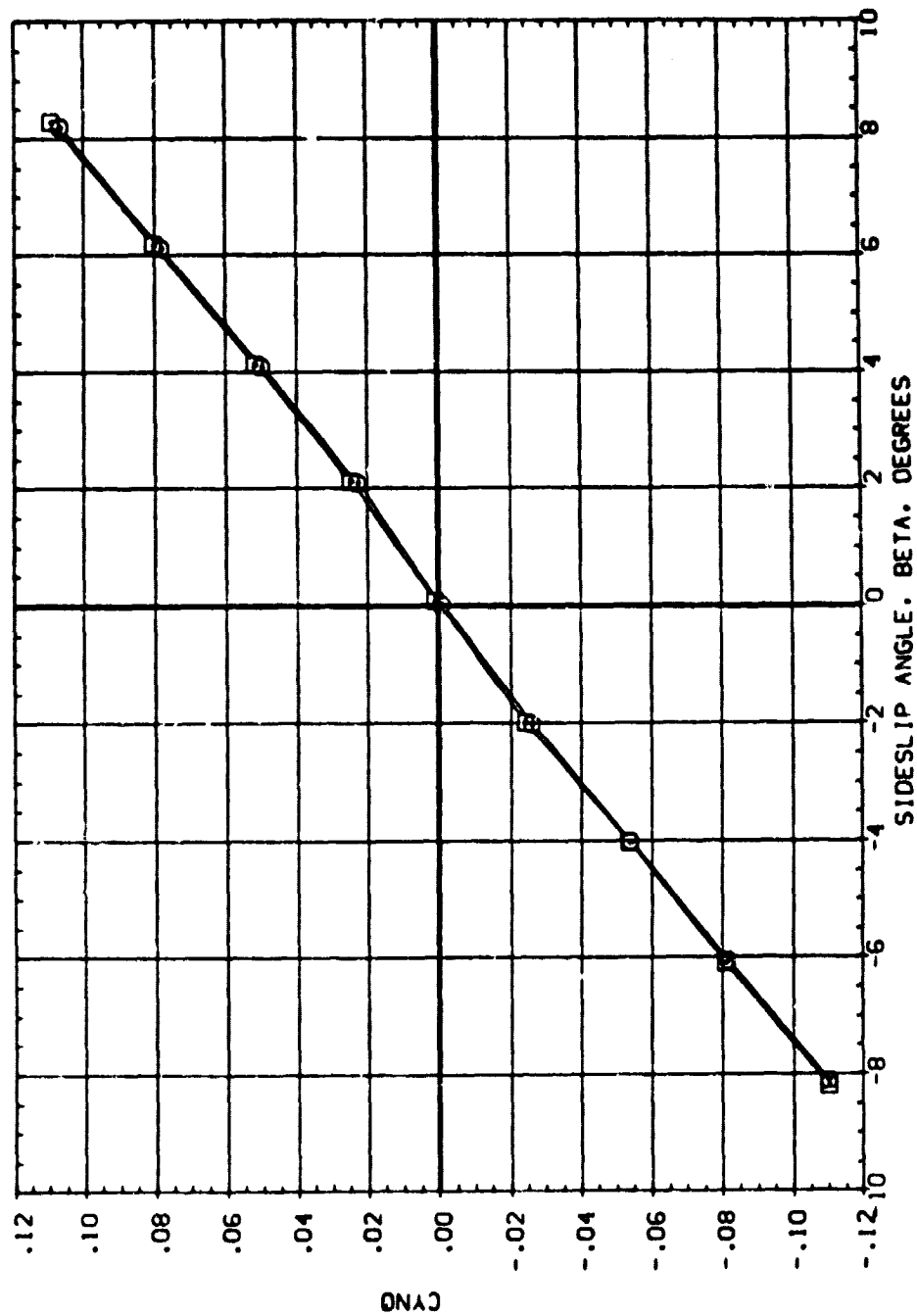
REFERENCE INFORMATION
 SREF 5.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF REYNOLDS NUMBER

(D)MACH = 1.10

	REFERENCE INFORMATION
SREF	6.1980 IN.
LREF	5.1612 IN.
BREF	2.7470 IN.
WREF	2.7120 IN.
VREF	.0000 IN.
ZREF	.0000 IN.
SCALE	.0000 PERCENT

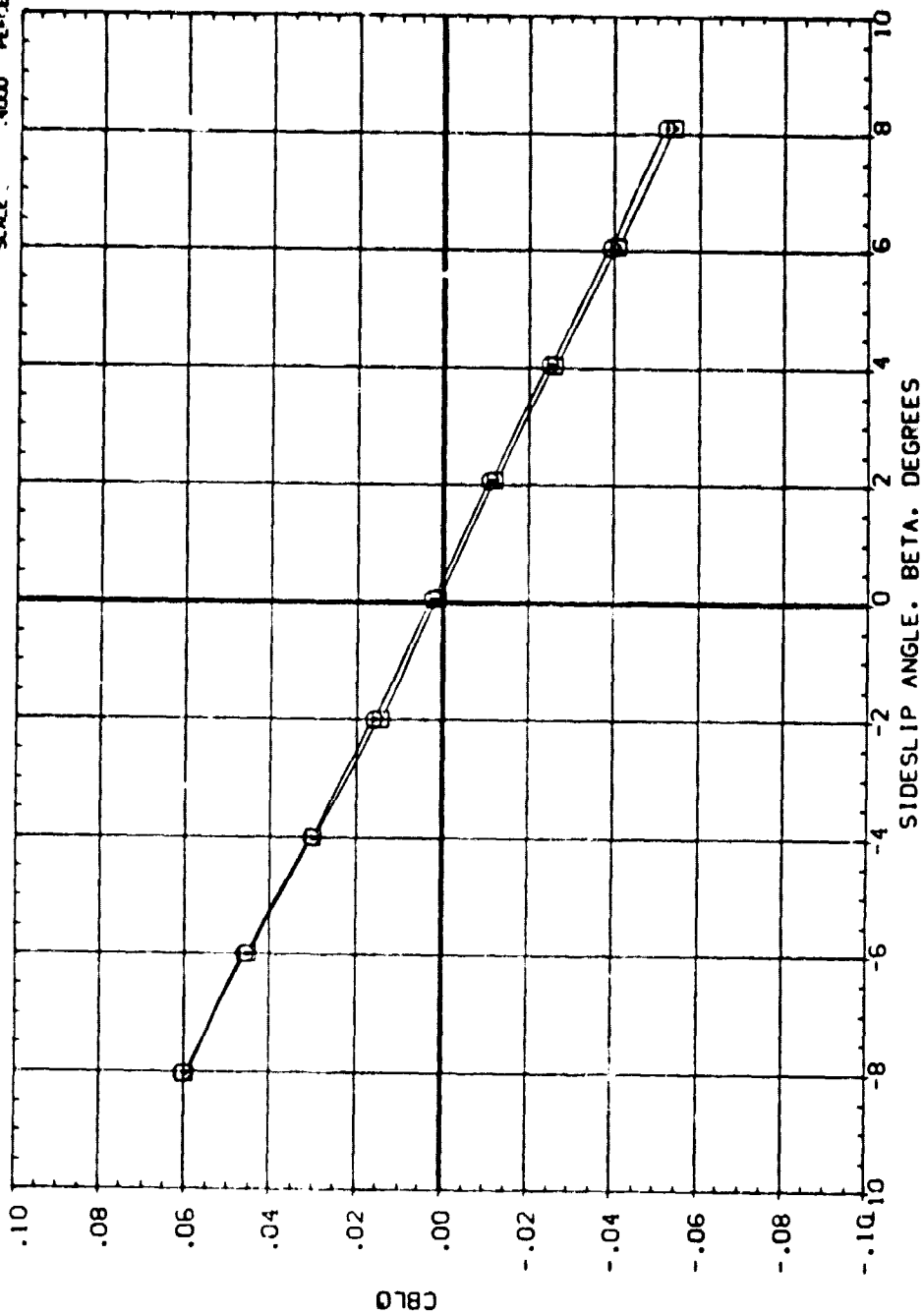


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.25

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION: FA20: MSC TWT 656: COF IG: 02022000A11353
 (FA2009) FA20: MSC TWT 656: COF IG: 02022000A11353
 (FA2015)

REFERENCE INFORMATION:
 SREF 6.1580 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 APREF 2.7120 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

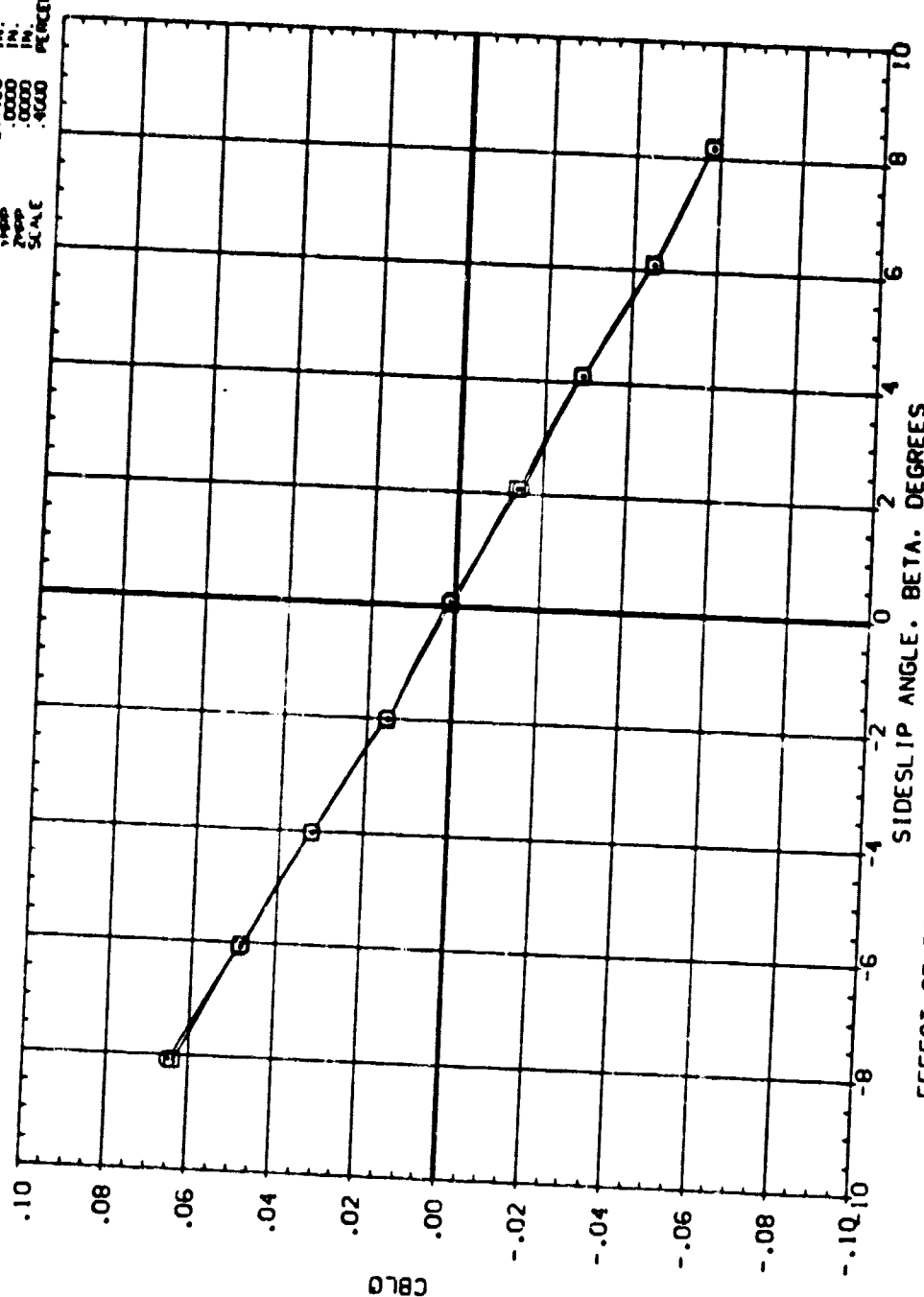


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

DATA SET SYMBOL: (FA2809)
 CONFIGURATION DESCRIPTION: FA28. MSFC INT 656. CONF IG. QNZE2MPAATT353
 (FA2815) 8 FA28. MSFC INT 656. CONF IG. QNZE2MPAATT353

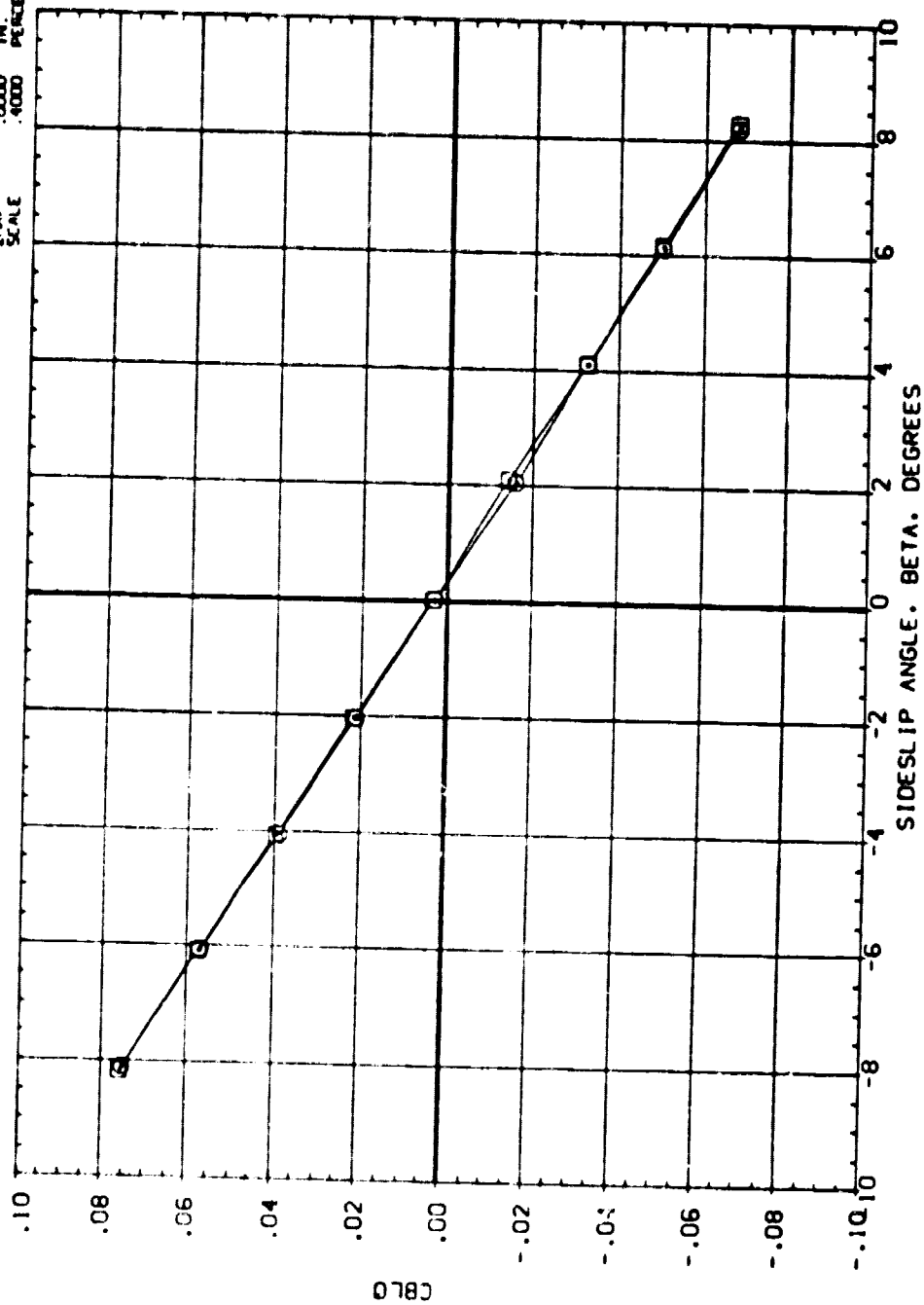
REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 3.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



EFFECT OF REYNOLDS NUMBER
 (B)MACH = .90

DATA SET SYMBOL: B
 (FA2809) (FA2815)
 CONFIGURATION DESCRIPTION
 FA28: MSC TWT 656, CONF IG. 02VZ28PAA11353
 FA28: MSC TWT 656, CONF IG. 02VZ28PAA11353

REFERENCE INFORMATION
 SIZE 6.1980 SQ. IN.
 AREA 5.1612 IN.
 PERIM 3.7470 IN.
 WING 2.7120 IN.
 WING .0000 IN.
 ZWING .0000 IN.
 SCALE .4000 PERCENT

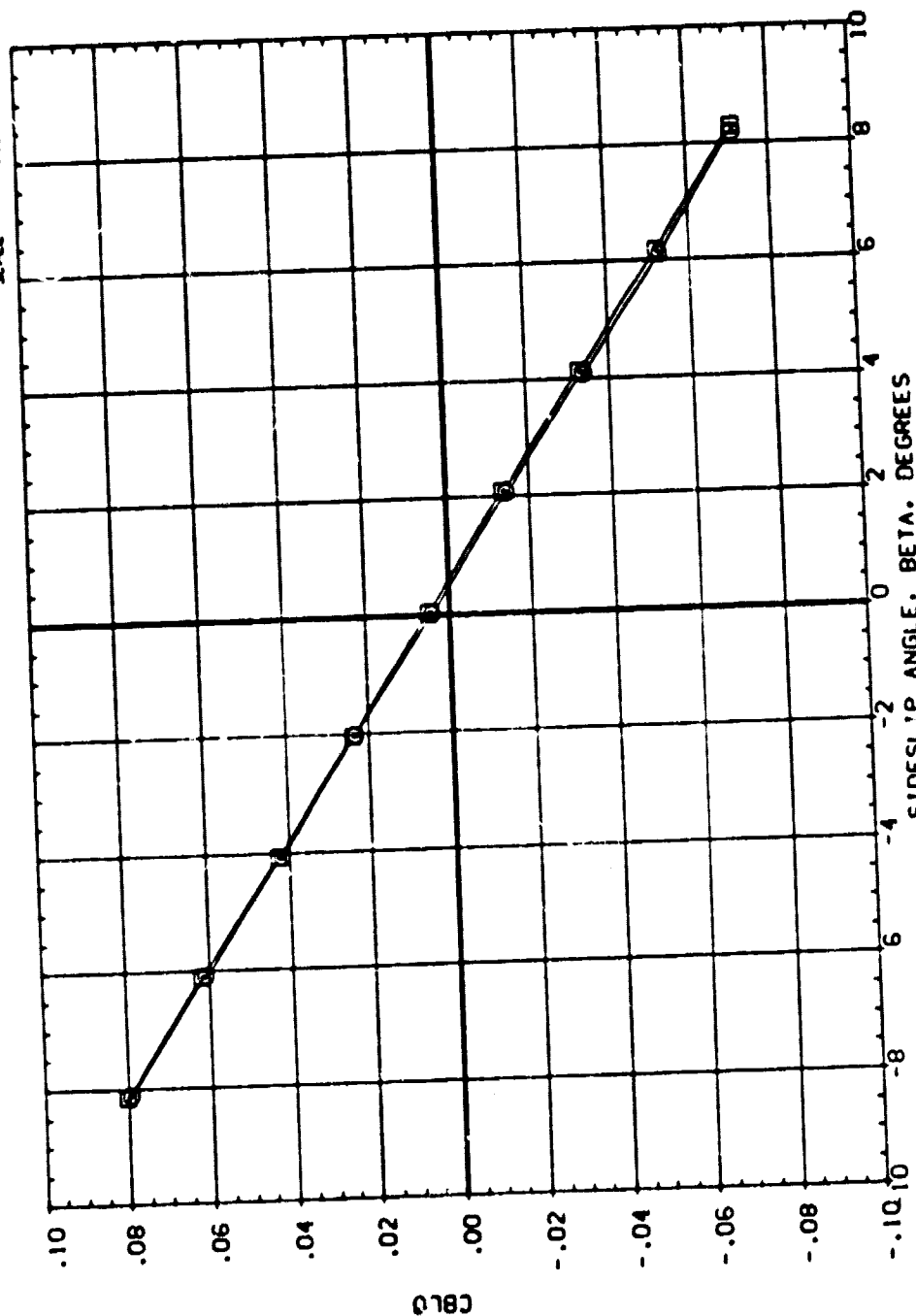


EFFECT OF REYNOLDS NUMBER

(C)MACH = 1.05


REFERENCE INFORMATION
 REF 6.1580 50. IN.
 LREF 5.1612 10.
 REF 3.7470 10.
 REF 2.7120 10.
 REF .0000 10.
 REF .0000 10.
 SCALE .0000 PERCENT

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2005) 8 FA20. MSFC TUT 656. CONF IG. CONF INFORMATION 253
 (FA2015) 8 FA20. MSFC TUT 656. CONF IG. CONF INFORMATION 253

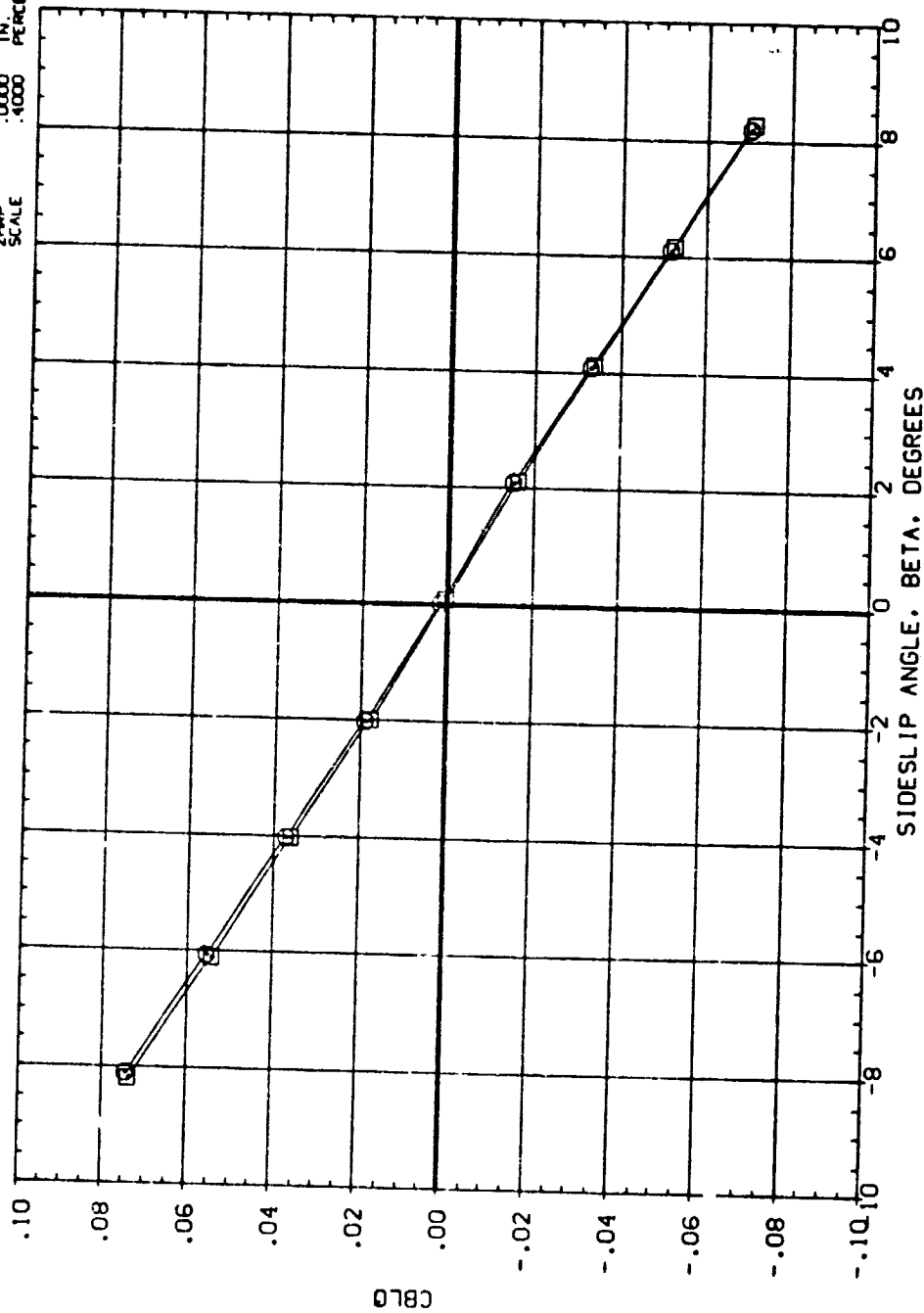


EFFECT OF REYNOLDS NUMBER

(D)MACH = 1.10

DATA SET SYMBOL: (FA2809) (FA2815)  CONFIGURATION DESCRIPTION: FA28. MSC TWT 656. CONF IG. 02N2E2MPAATT353
FA28. MSC TWT 656. CONF IG. 02N2E2MPAATT353

REFERENCE INFORMATION
SREF 6.1980 IN. 50. IN.
LREF 5.1612 IN.
BREF 3.7470 IN.
APRP 2.7120 IN.
THRP .0000 IN.
ZHRP .0000 IN.
SCALE .4000 PERCENT

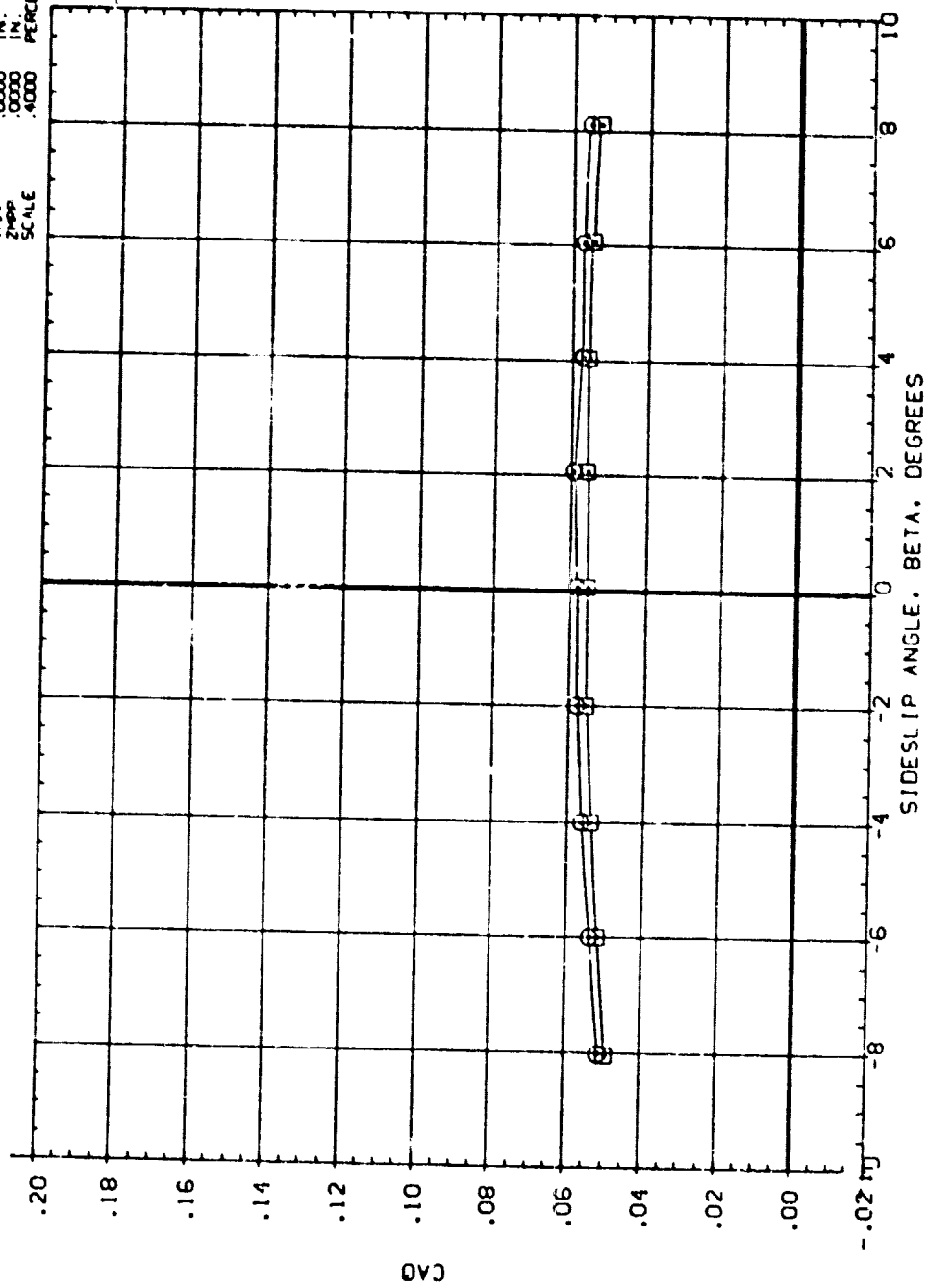


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2803) □ FA28. MSFC TWT 656. CDF 16. 02N2E 20P1A11353
 (FA2815) □ FA28. MSFC TWT 656. CDF 16. 02N2E 20P1A11353

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

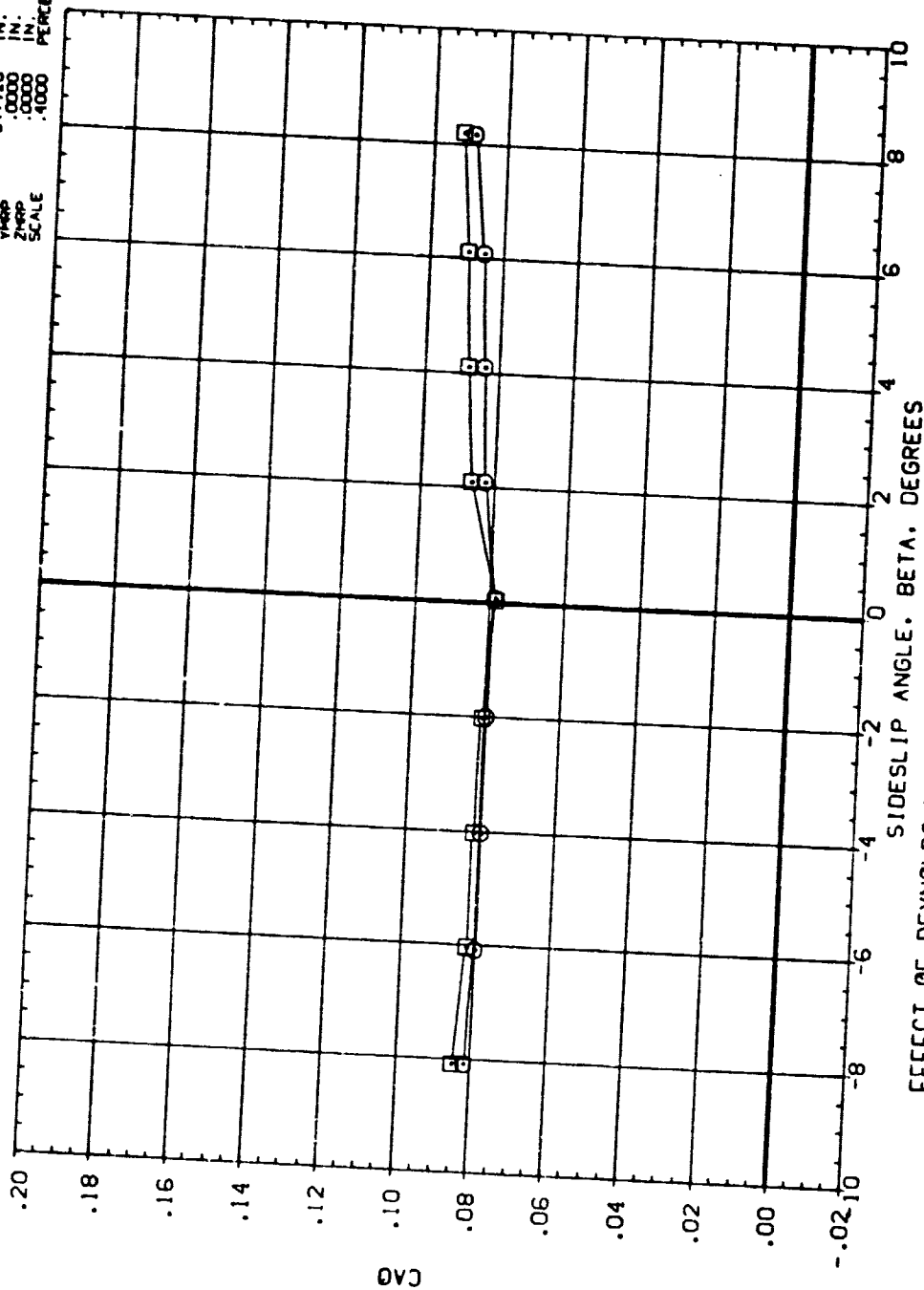


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) 8 FA28. MSC INT 656.1 CONFIG. 02VZ22PAPATT353
 (FA2815) 8 FA28. MSC INT 656.1 CONFIG. 02VZ22PAPATT353

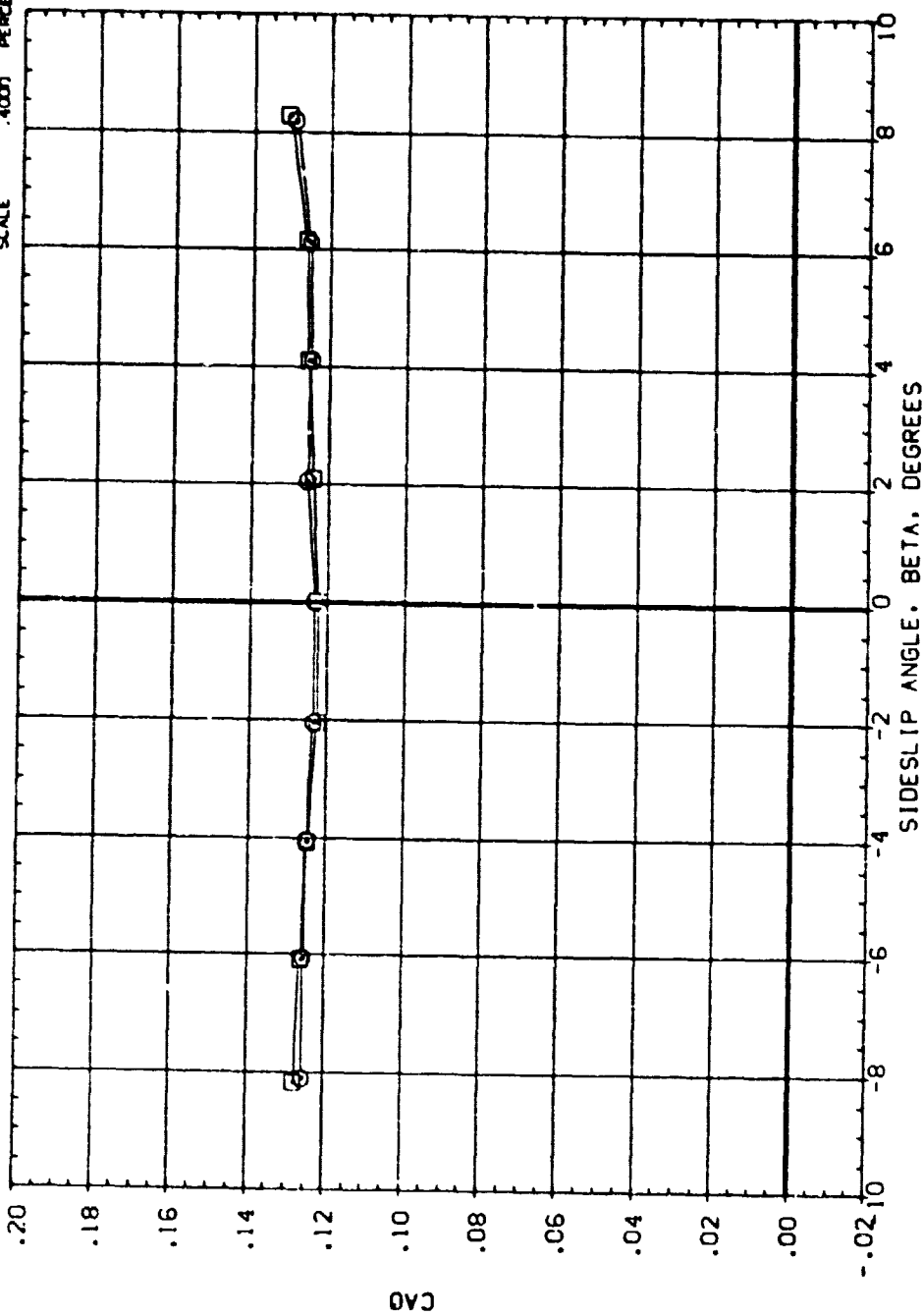
REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF REYNOLDS NUMBER
 (B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2803) FA28: MSFC TVT 656, CONF 1G, 02N2E20NPAAT1353
 (FA2815) FA28: MSFC TVT 656, CONF 1G, 02N2E20NPAAT1353

REFERENCE INFORMATION
 SREF 6.1980 SO. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 VREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4007 PERCENT

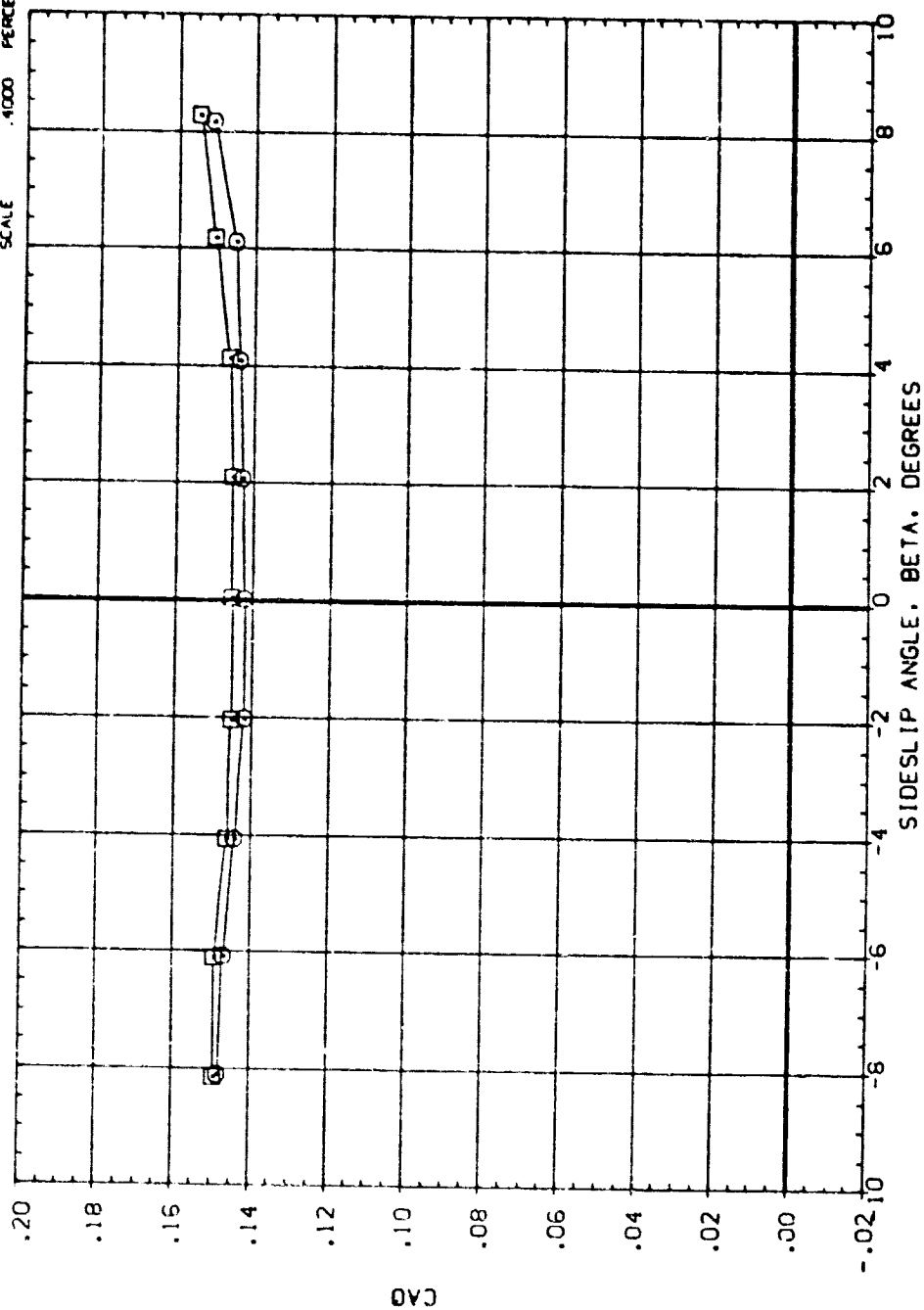


EFFECT OF REYNOLDS NUMBER

(C)MACH = 1.05

DATA SET SYMBOL: 8
 (FA2809) FA28. MSFC TWT 656. CONF. 10. 02NZE2MPTAT1353
 (FA2815) FA28. MSFC TWT 656. CONF. 10. 02NZE2MPTAT1353

REFERENCE INFORMATION
 SREF 5.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

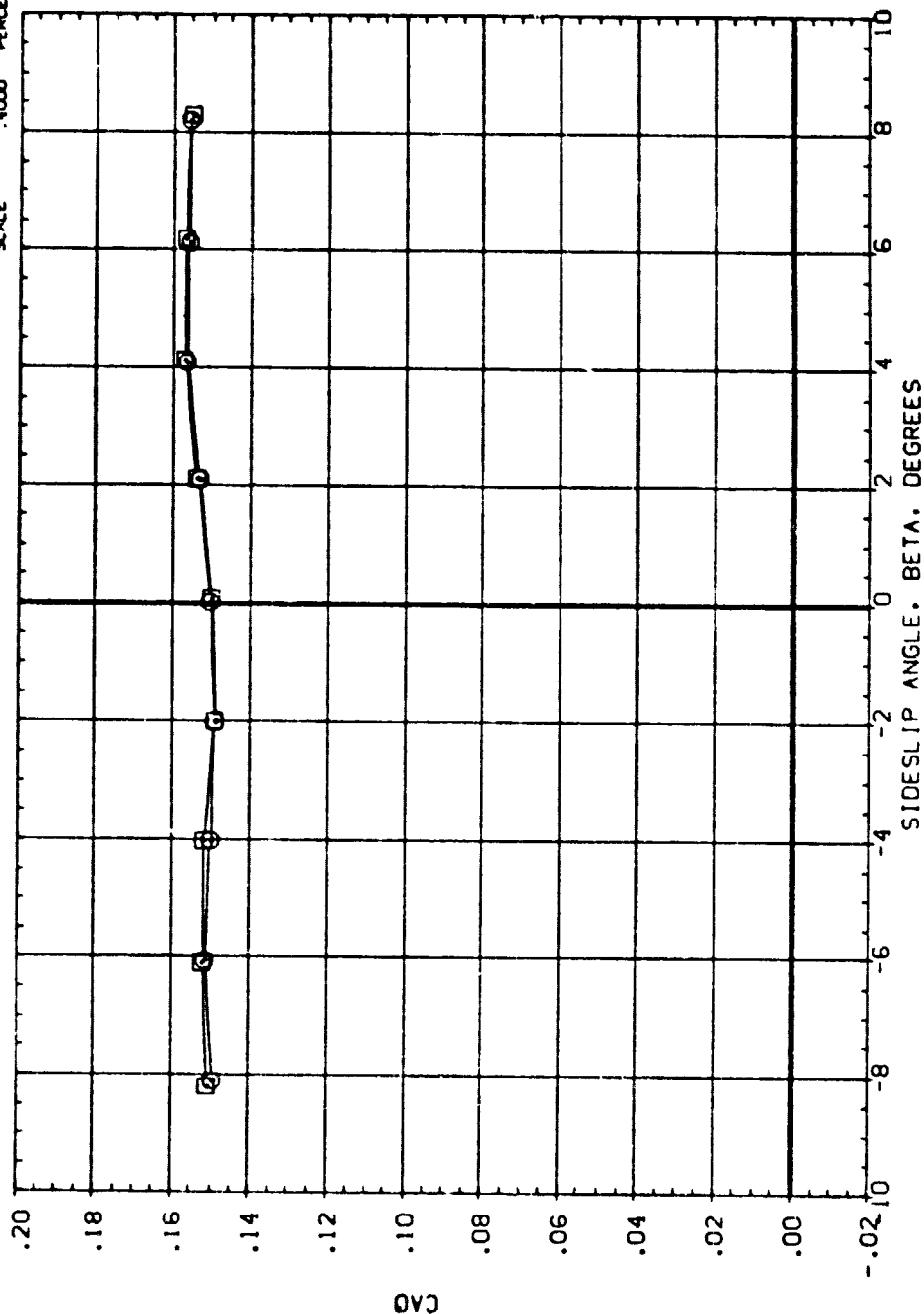


EFFECT OF REYNOLDS NUMBER

(D)MACH = 1.10

DATA SET SYMBOL: (FA2809) (FA2815) □
 CONFIGURATION DESCRIPTION: FA28, MSFC TWT 556, CONFIG: 02VZEPAPATT353
 FA28, MSFC TWT 556, CONFIG: 02VZEPAPATT353

REFERENCE INFORMATION:
 SREF: 6.1980 IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 XREF: 2.7120 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT

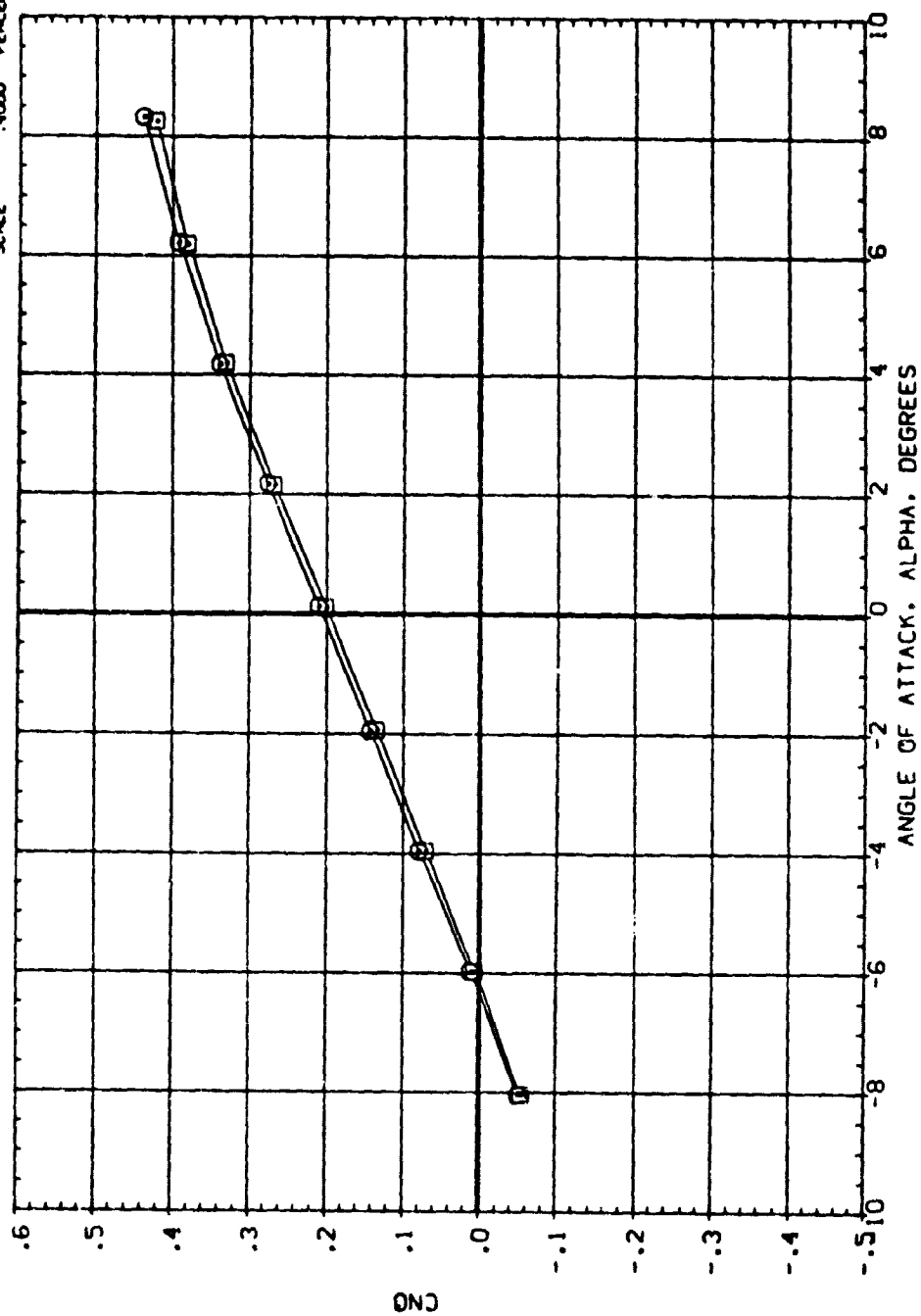


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.25

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION:
 (FA2808) FA28, MSFC INT 656, CONF 16, CONF 22, MPATT 33 GR
 (FA2817) FA28, MSFC INT 656, CONF 16, CONF 22, MPATT 33 GR

REFERENCE INFORMATION
 SREF 5.1960 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

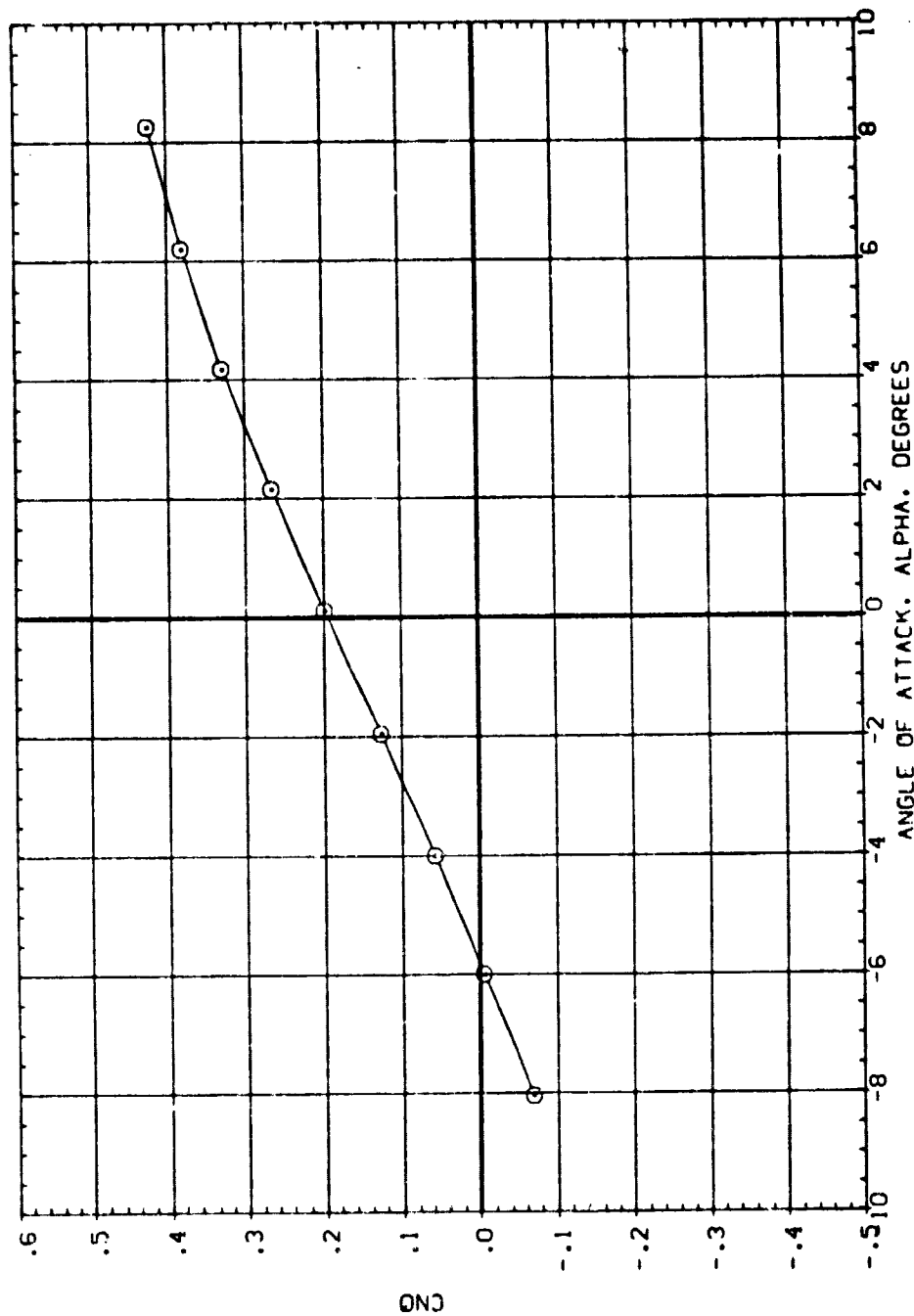


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) FA28, MSC TWT 656, CONFIG. 02VZ22NPAA1T353
 (FA2817) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

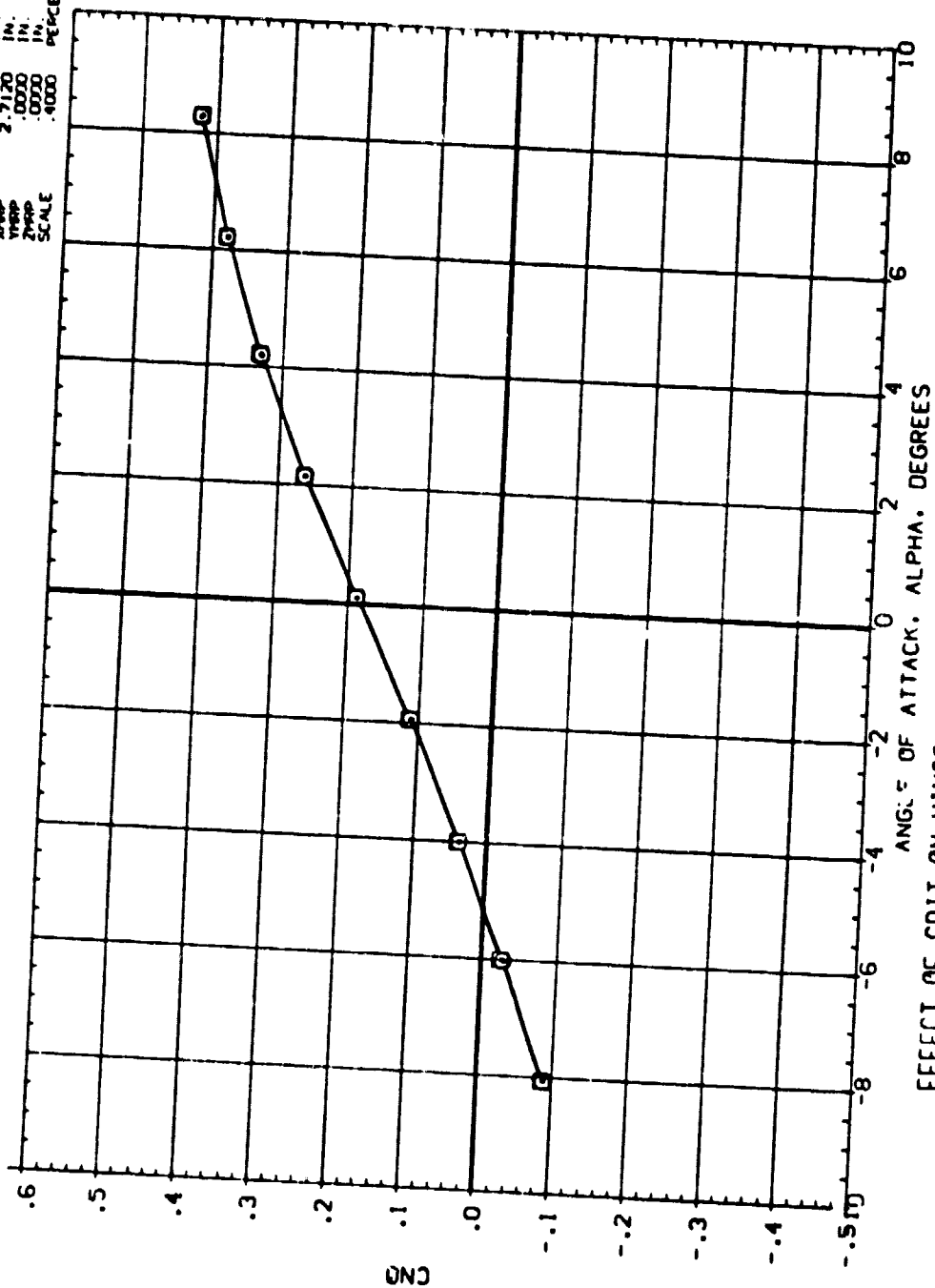


EFFECT OF GRIT ON WINGS

(C)MACH = .95

DATA SET SYMBOL: B
 CONFIGURATION DESCRIPTION: FA28, MSC TWT 656, CONFIG. 02NZE2P0A1T353
 (FA2808) FA28, MSC TWT 656, CONFIG. 02NZE2P0A1T353 or

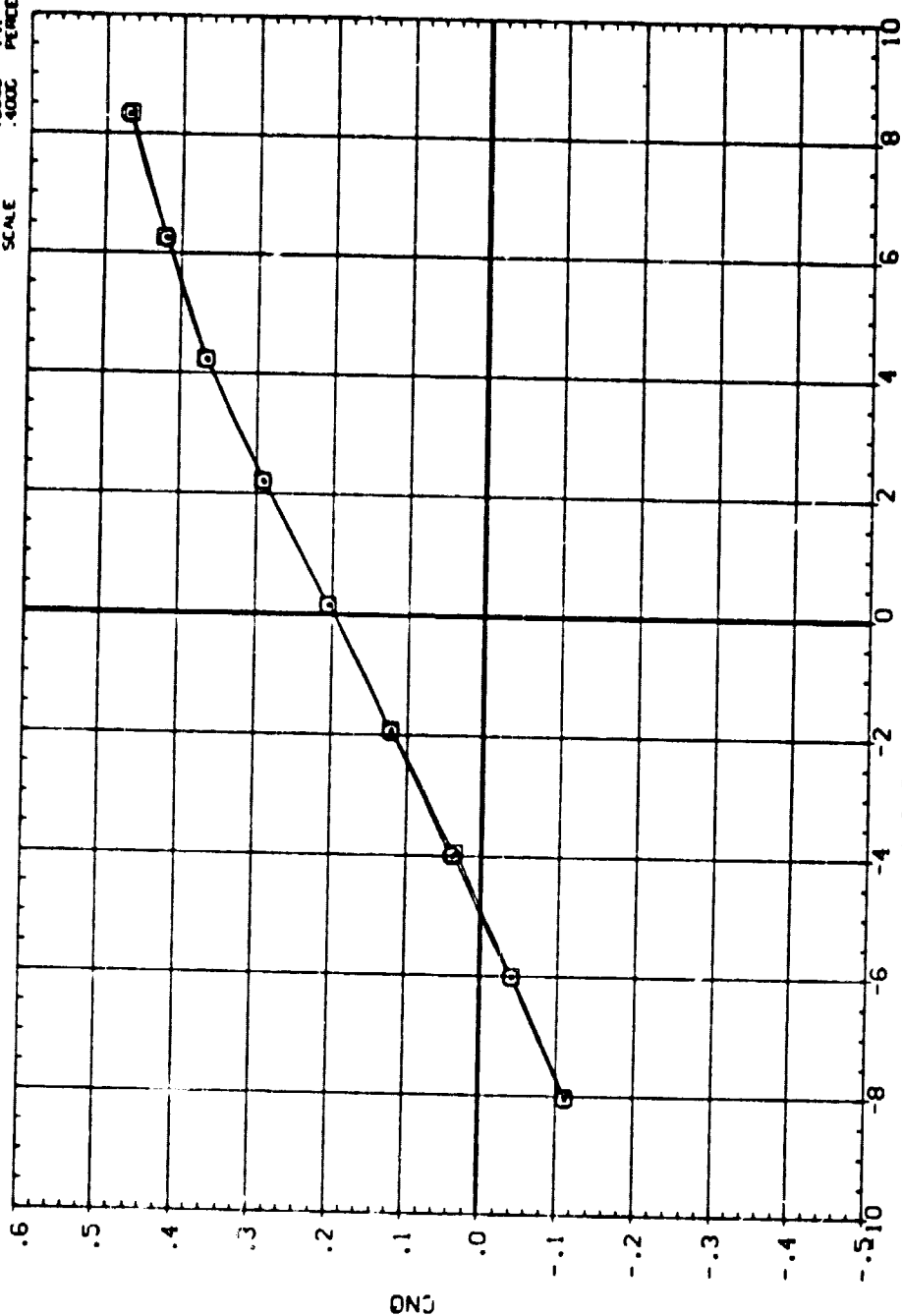
REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



EFFECT OF GRIT ON WINGS
 (0)MACH = 1.05

DATA SET SYMBOL:
 (FA2808)
 (FA2817)
 CONFIGURATION DESCRIPTION:
 FA28. MSFC TWT 656. CONFIG. 02NZE2MPANT1353
 FA28. MSFC TWT 656. CONFIG. 02NZE2MPANT1353 GR

REFERENCE INFORMATION:
 SREF 5.1580 IN.
 LREF 5.1512 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

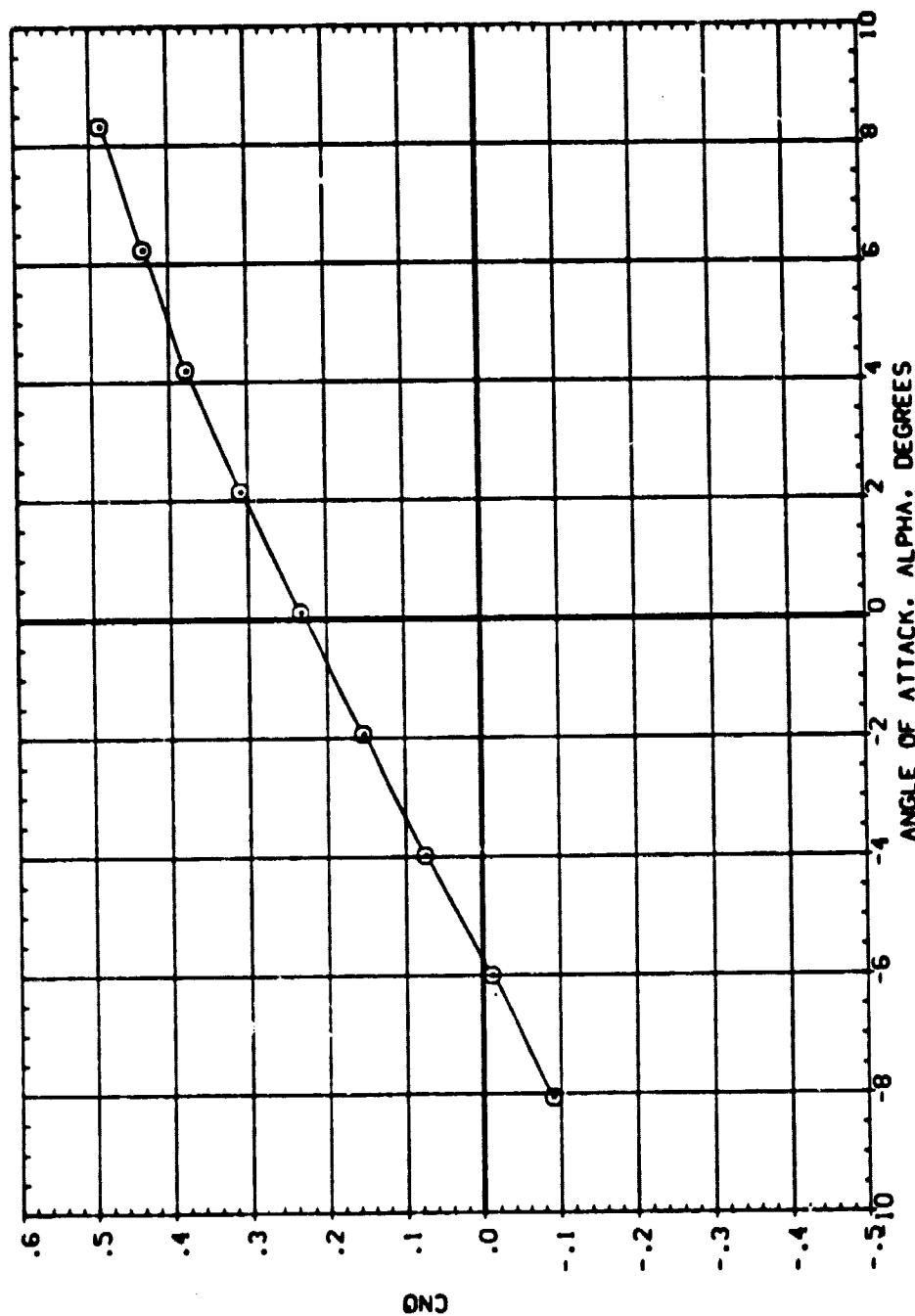


EFFECT OF GRIT ON WINGS

(E)MACH = 1.10

REFERENCE INFORMATION
 SET 5 1580 50. IN
 LAST 5 1612 10. IN.
 SPOT 3 7470 10. IN.
 SPOT 2 7120 10. IN.
 SPOT 1 0000 10. IN.
 SCALE 4000 PERCENT

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA200) FA20. MSC TVT 656. CONF. 02V22PMA1T353
 (FA2017) DATA NOT AVAILABLE

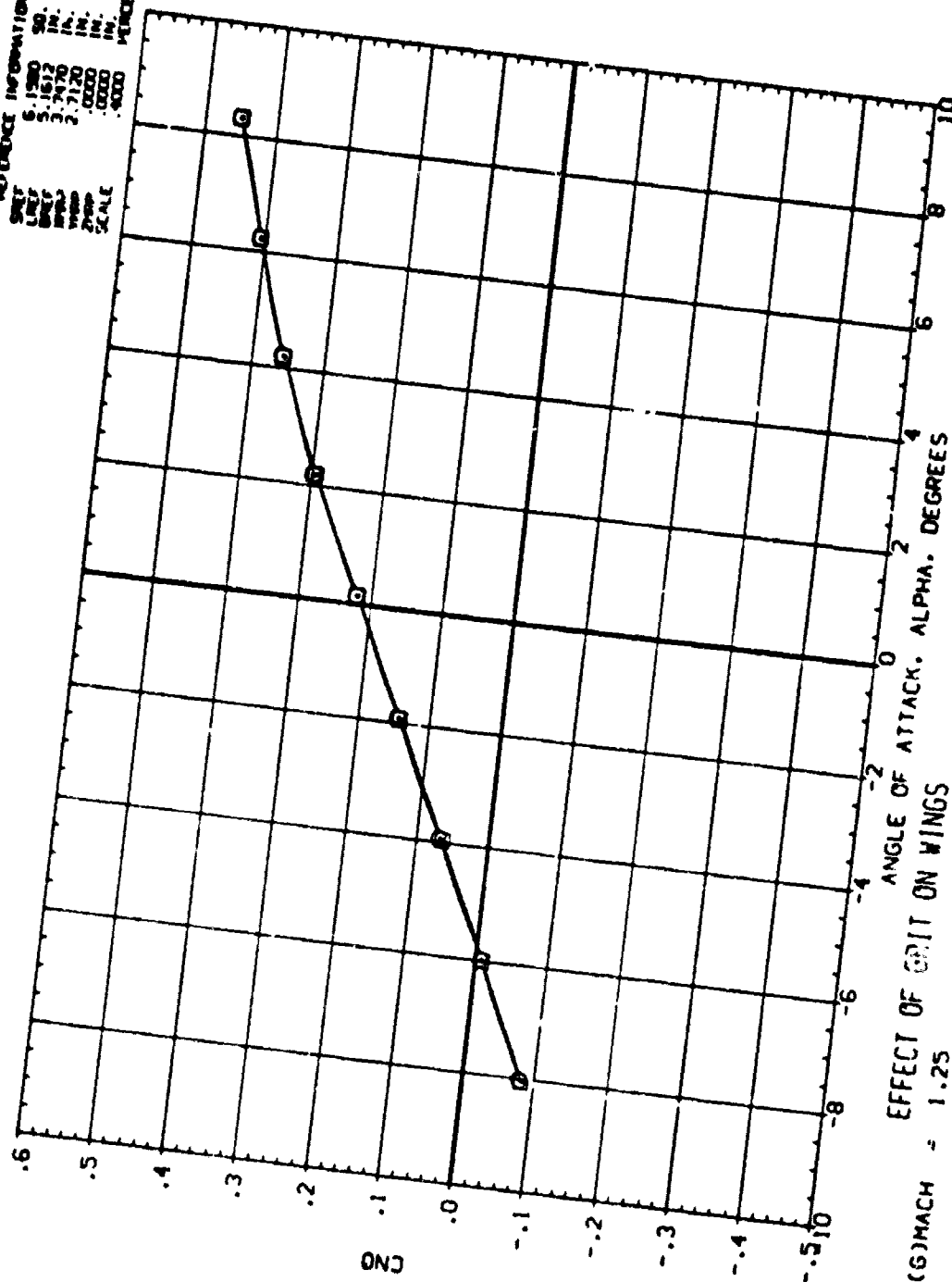


EFFECT OF GRIT ON WINGS

(F)MACH = 1.15

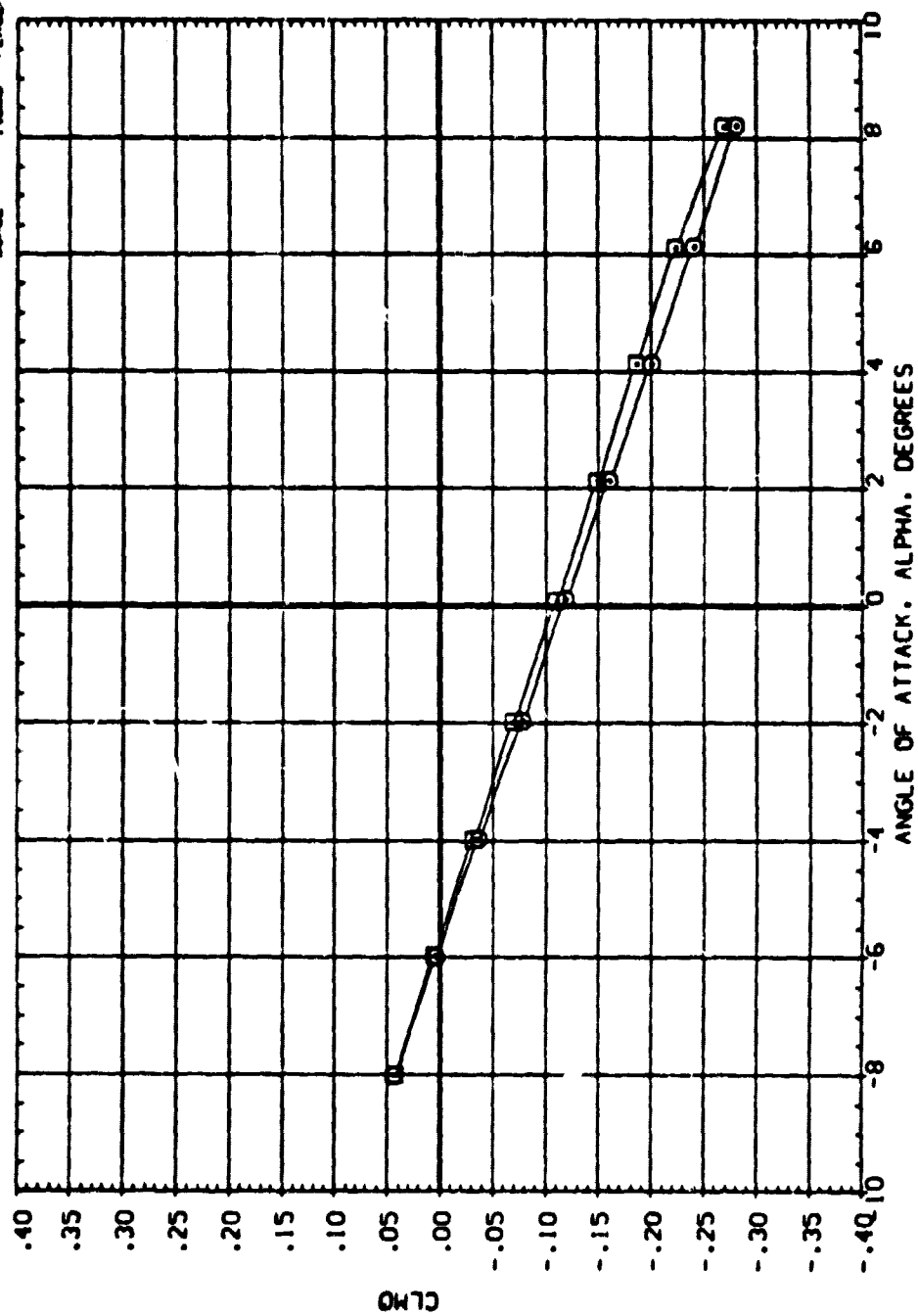
DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA20, MSC 147 656, CONF 10, ONCE 2000011253 OR
 FA20, MSC 147 656, CONF 10, ONCE 2000011253 OR

REFERENCE INFORMATION
 SET: 6.1200 50. IN
 LIFT: 5.1613 14. IN
 DRAG: 3.7470 14. IN
 YAW: 2.7120 14. IN
 ZW: .0000 14. IN
 SCALE: .0000 14. IN
 PERIOD: .0000 14. IN



EFFECT OF GRIT ON WINGS
 (G)MACH = 1.25

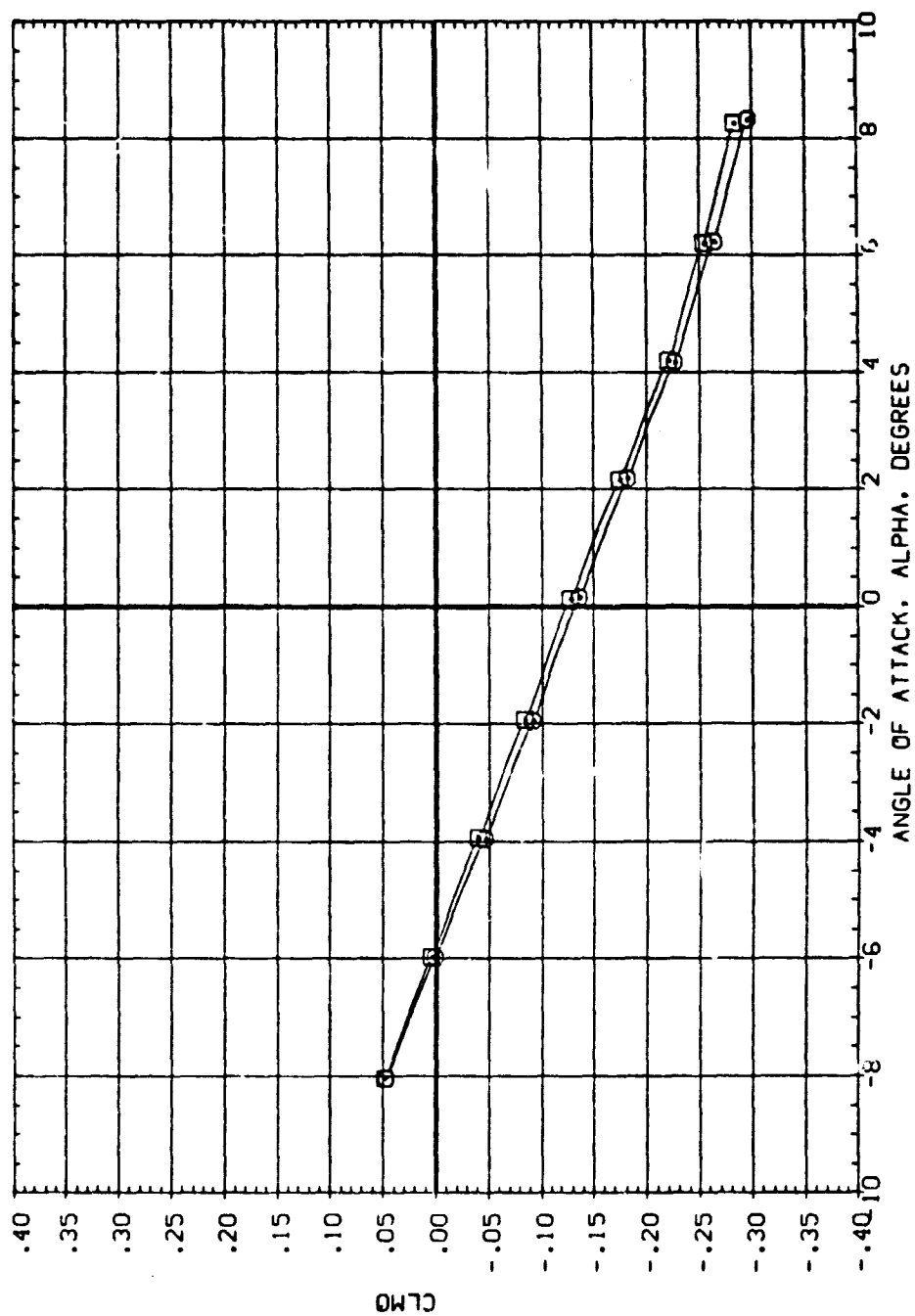
REVENUE INFORMATION	
NET	6,180 IN.
LAT	5,1612 IN.
NET	2,7170 IN.
NET	2,7120 IN.
WAP	.0000 IN.
WAP	.0000 IN.
SCALE	.0000 PERCEN



EFFECT OF GRIT ON WINGS

$$\{ \lambda \} \text{MACH} = .60$$

SCALE	.0000	IN.
ZPRD	.0000	IN.
VPRD	.0000	IN.
XPRD	2.7120	IN.
BPREF	3.7470	IN.
LREF	5.1612	IN.
SPREF	6.1980	IN.

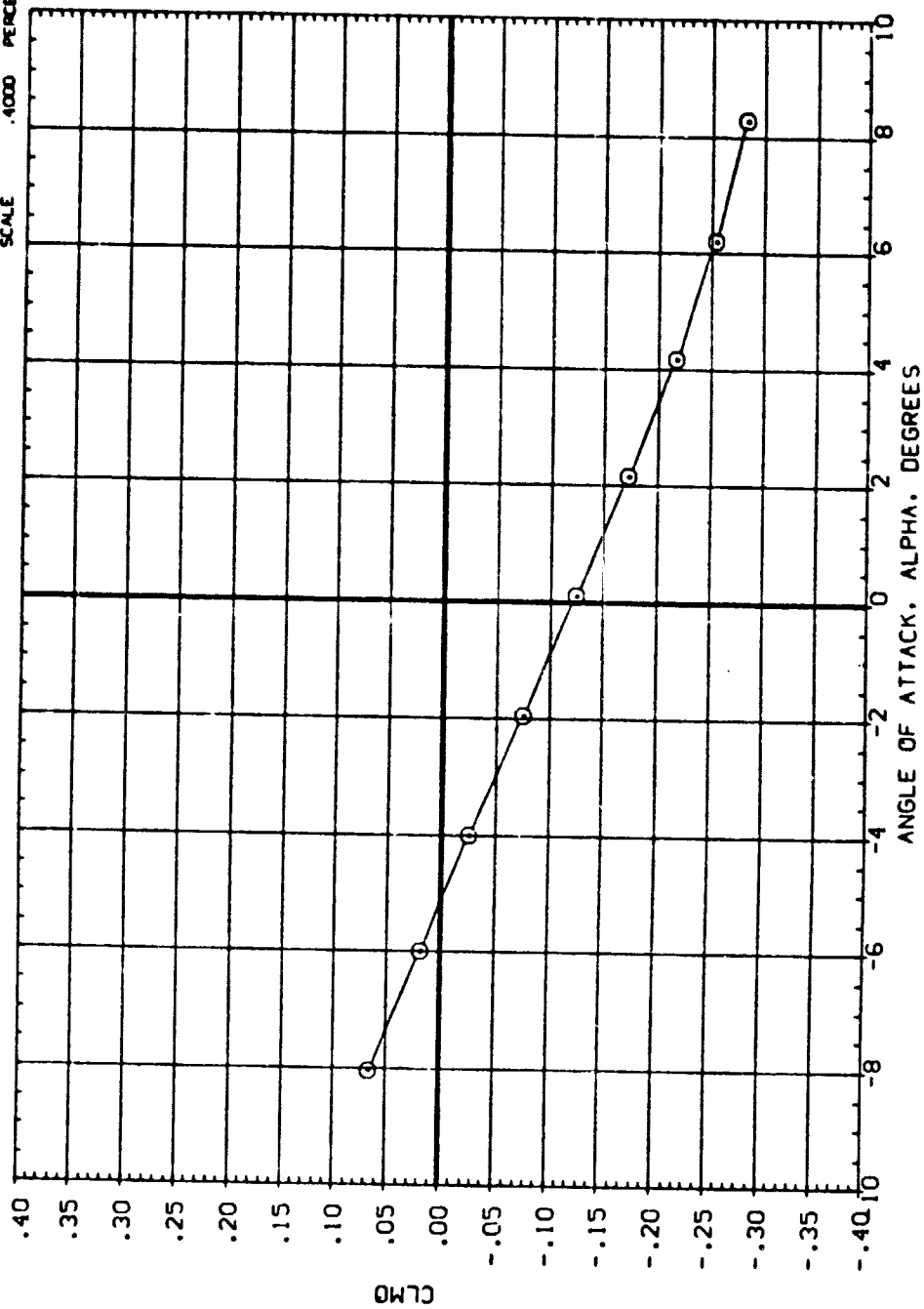


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL: B
 CONFIGURATION DESCRIPTION: FA28, MSFC, TWT, ESS, CONFIG. 02VZ2PMPAT7353
 (FA2817) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 5.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

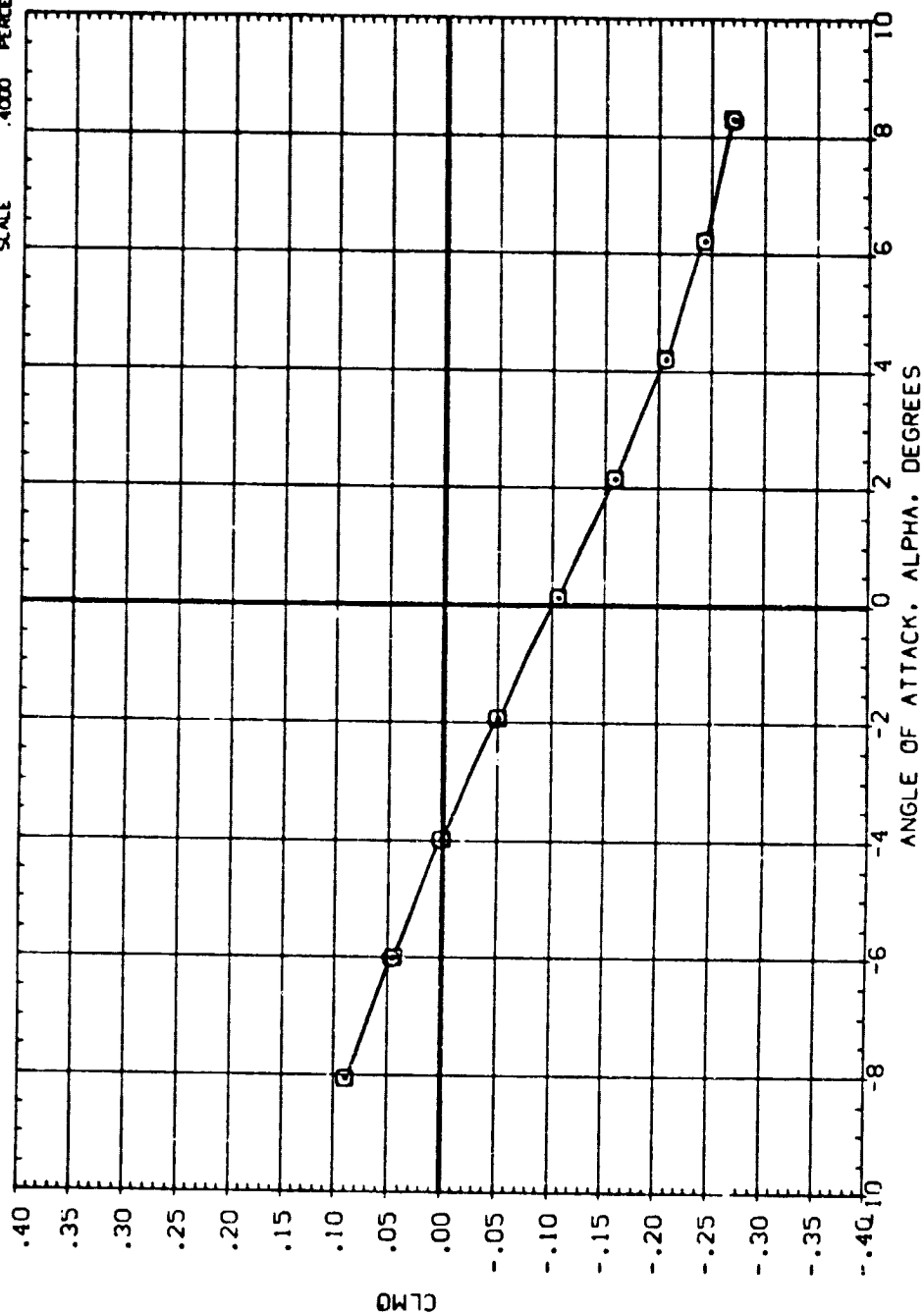


EFFECT OF GRIT ON WINGS

(C)MACH = .95

DATA SET SYMBOL: B CONFIGURATION DESCRIPTION:
 (FA2008) FA28. MSFC TWT 656. CONF IG. 02VZL2M4PAAT1253 GR
 (FA2017) FA28. MSFC TWT 656. CONF IG. 02VZL2M4PAAT1353 GR

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

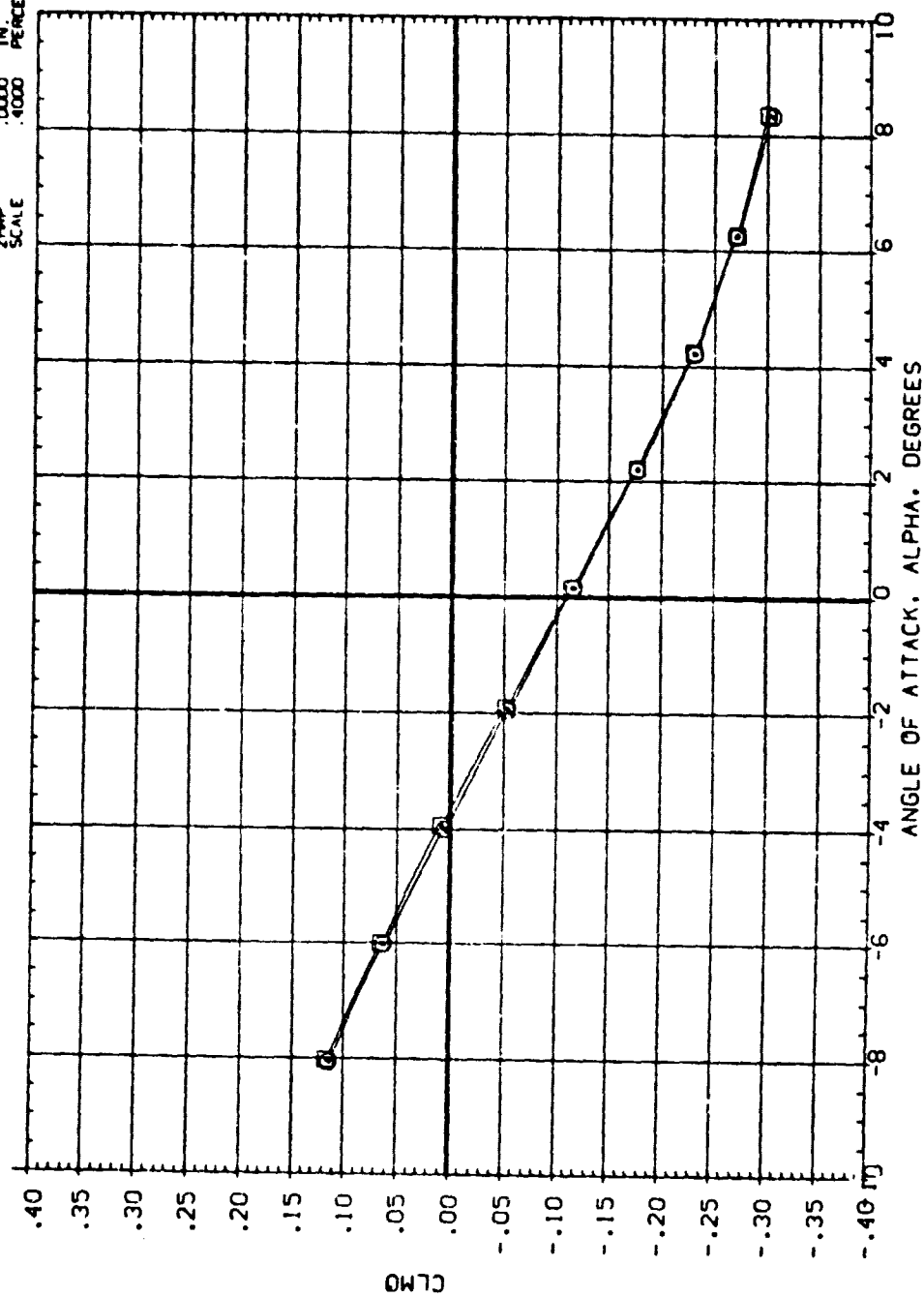


EFFECT OF GRIT ON WINGS

(D)MACH = 1.05

DATA SET SYMBOL: B
 CONFIGURATION DESCRIPTION: FA28, MSFC INT 656: CONFIG: 0202E2M0PAATT753 GR
 FA28, MSFC INT 656: CONFIG: 0202E2M0PAATT753 GR

REFERENCE INFORMATION
 SREF 6.1260 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YPROP 2.7120 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

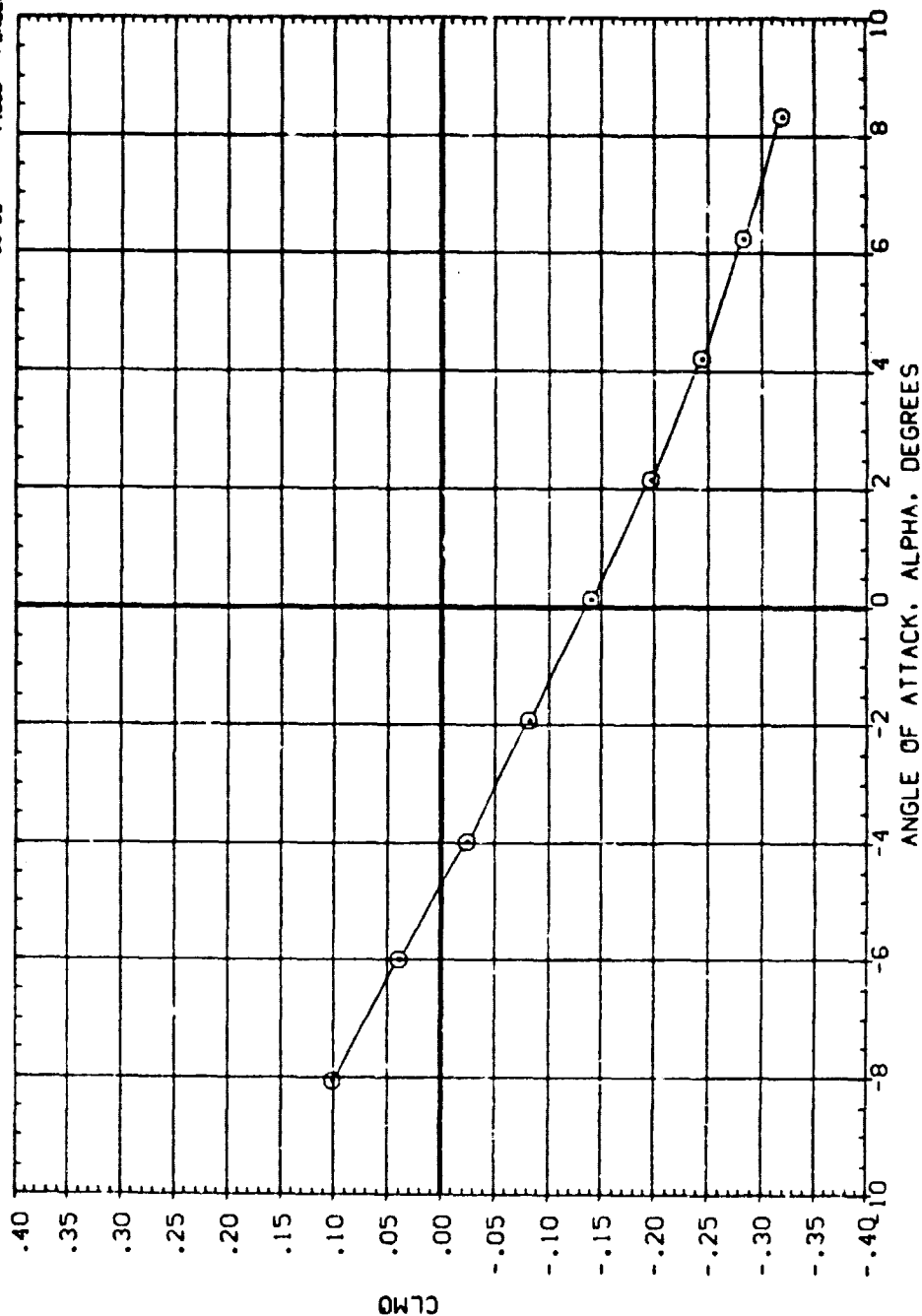


EFFECT OF GRIT ON WINGS

(E)MACH = 1.10

DATA SET SYMBOL: FA28-MSFC TWT 656. CONFIG. 02V2E2PAPAA11353
 (FA2808) □ DATA NOT AVAILABLE
 (FA2817) □

REFERENCE INFORMATION
 SREF 5.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

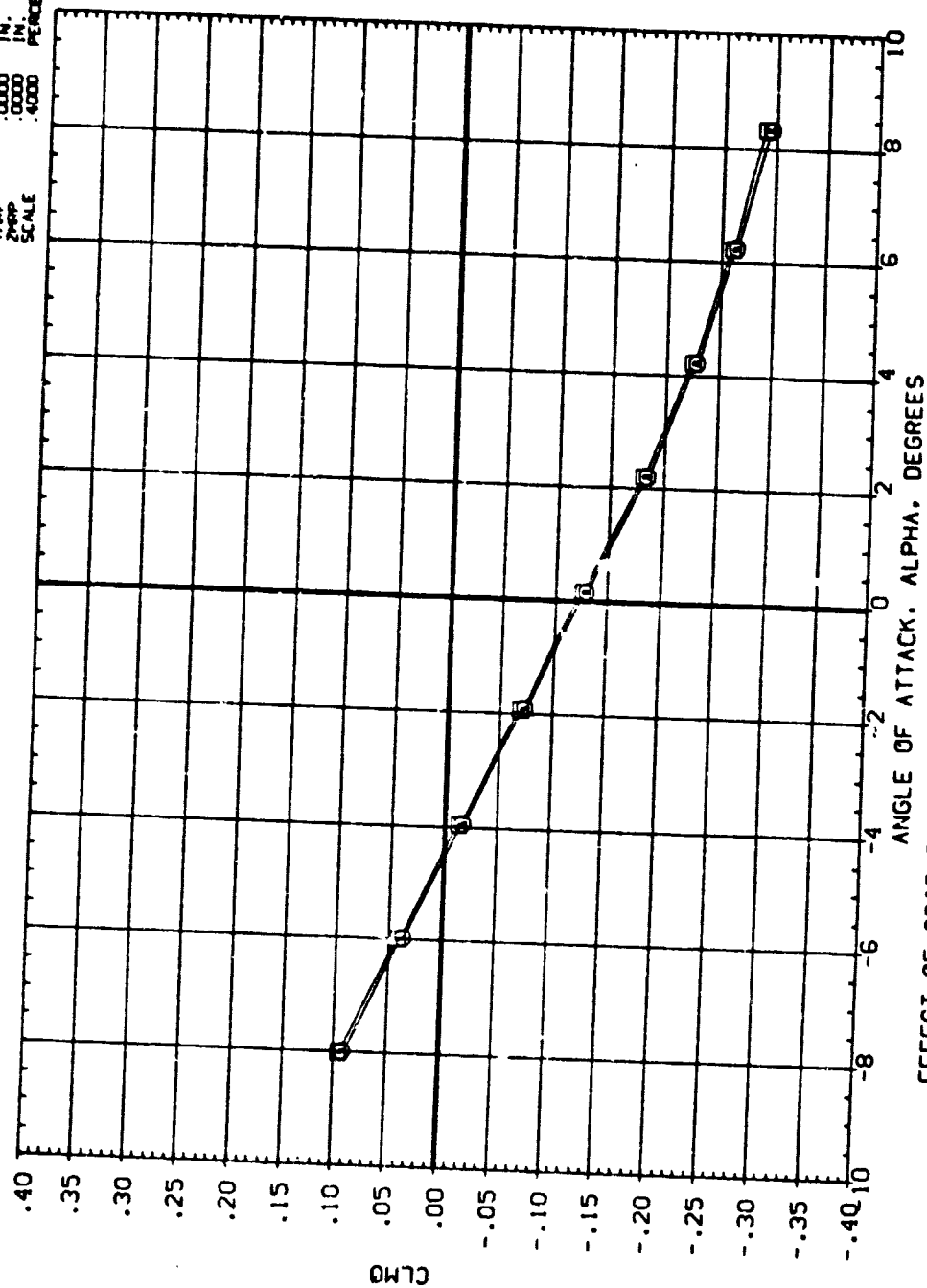


EFFECT OF GRIT ON WINGS

(F)MACH = 1.15


DATA SET SYMBOL: 8
 (FA2808) CONFIGURATION DESCRIPTION: FA28. MSC TWT 656. COF IG: 02XZ2M0PAAT7353
 (FA2817) FA28. MSC TWT 656. COF IG: 02XZ2M0PAAT7353 GR

REFERENCE INFORMATION
 SREF 6.1960 50. IN.
 LREF 5.1612 10. IN.
 BREF 2.7470 10. IN.
 WREF 2.7120 10. IN.
 ZREF .0000 10. IN.
 SCALE .4000 PERCENT

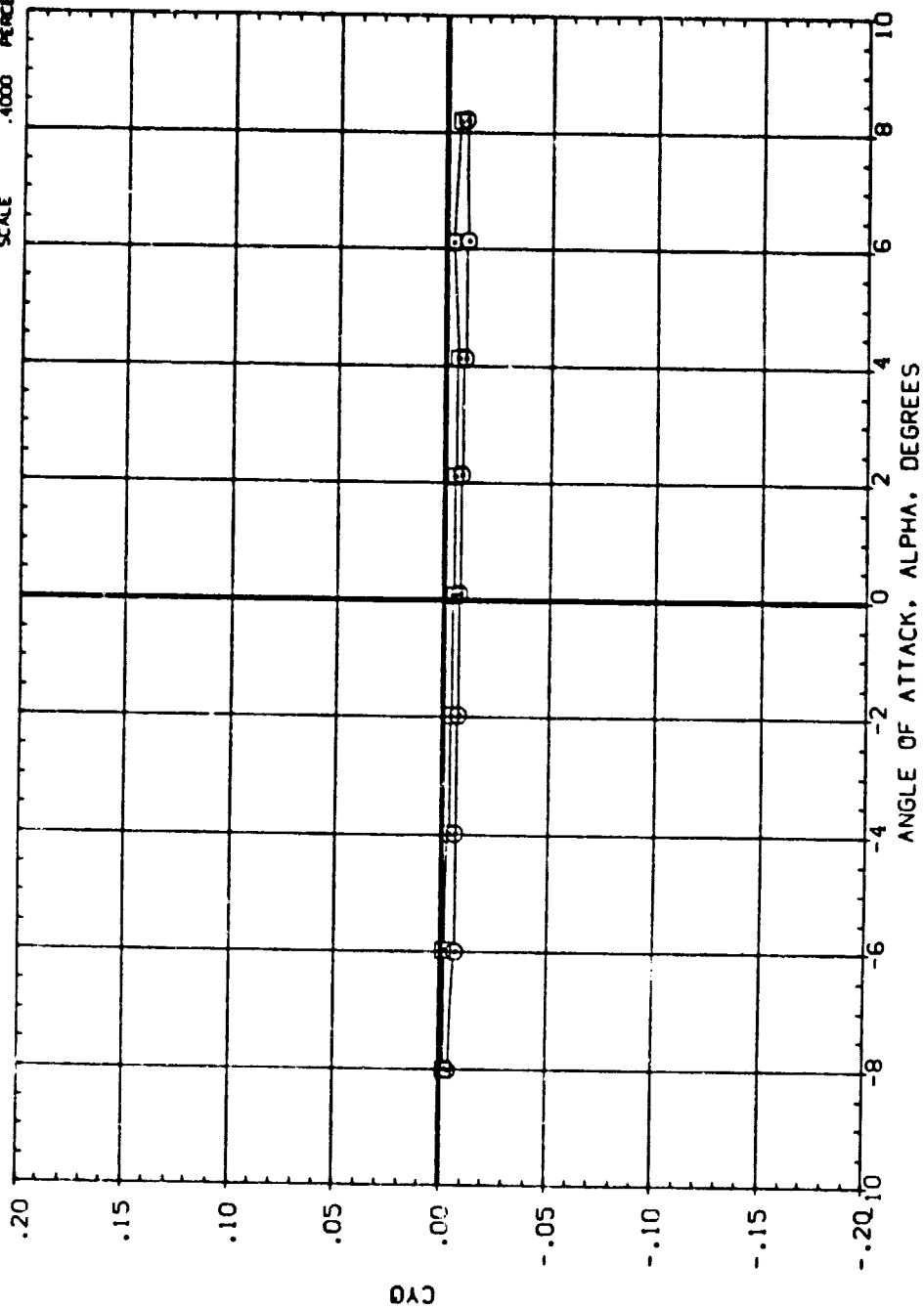


EFFECT OF GRIT ON WINGS

(G)MACH = 1.25

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FA28081) FA28. MSFC TVT 656. CONFIG. 02N2E20PAA1T353
 (FA2817) FA28. MSFC TVT 656. CONFIG. 02N2E20PAA1T353 GR

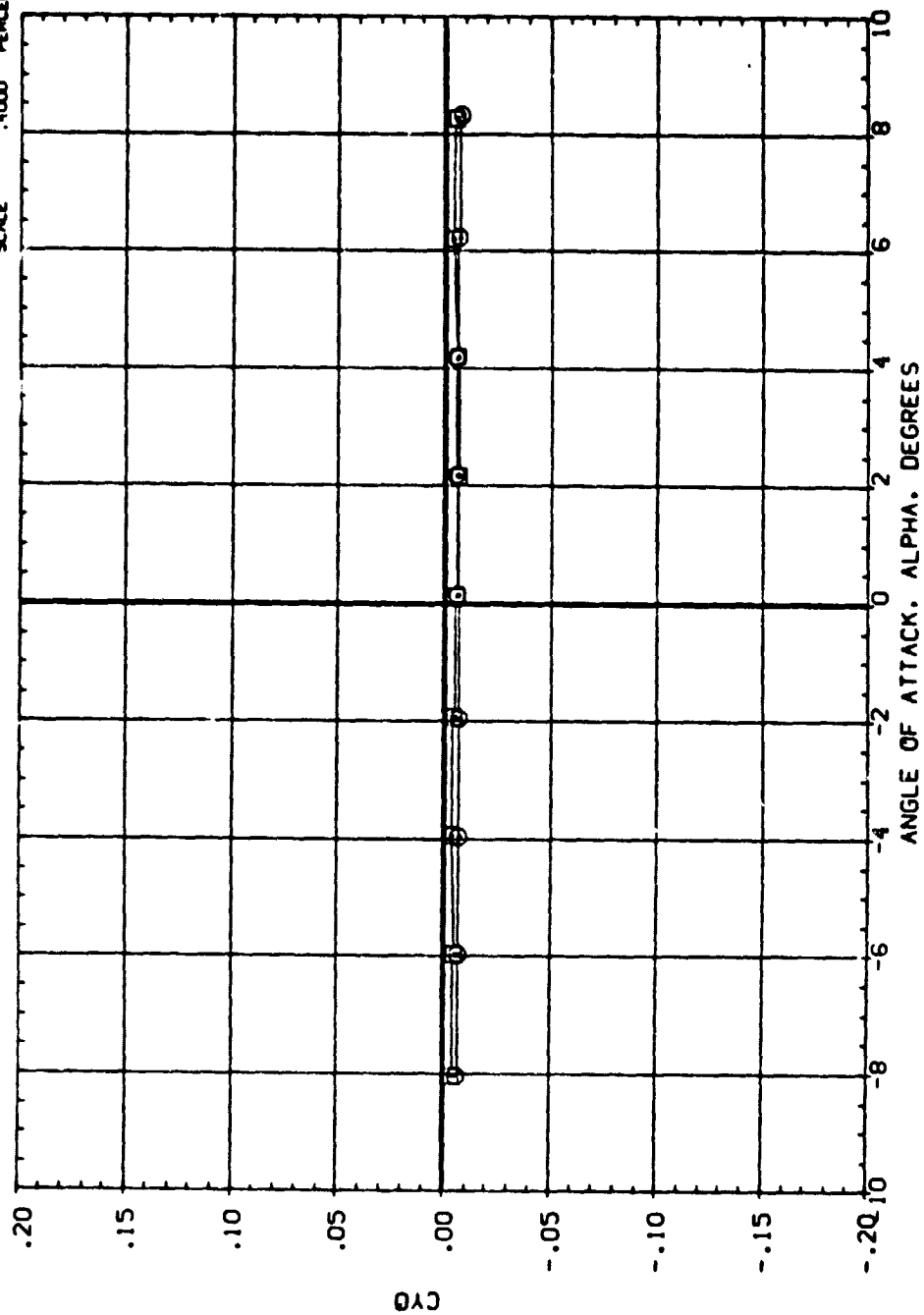
REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XPRP 2.7120 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF GRIT ON WINGS

(A)MACH = .60

REFERENCE INFORMATION	
SAEF	6.1580 IN.
LAEF	5.1612 IN.
BREF	3.7470 IN.
XREF	2.7120 IN.
YREF	.0000 IN.
ZREF	.0000 IN.
SCALE	.0000 PERCENT

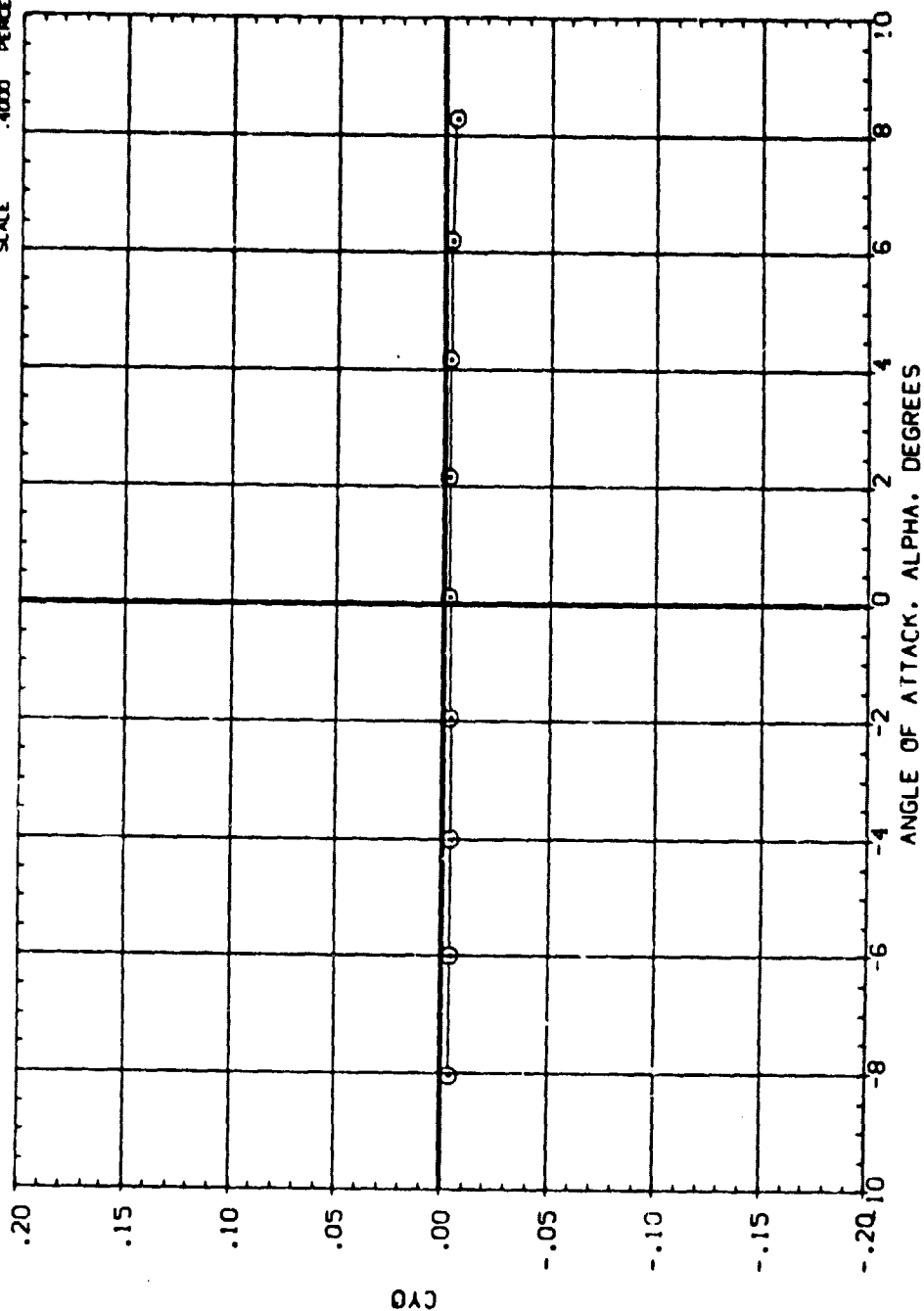


EFFECT OF GRIT ON WINGS

$$(B)_{MACH} = .90$$

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2808) FA28. MSFC TWT 656. CONFIG. 00VZ2PMPAATT353
 (FA2817) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 IN
 LREF 5.1612 IN
 BREF 3.2470 IN
 XREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

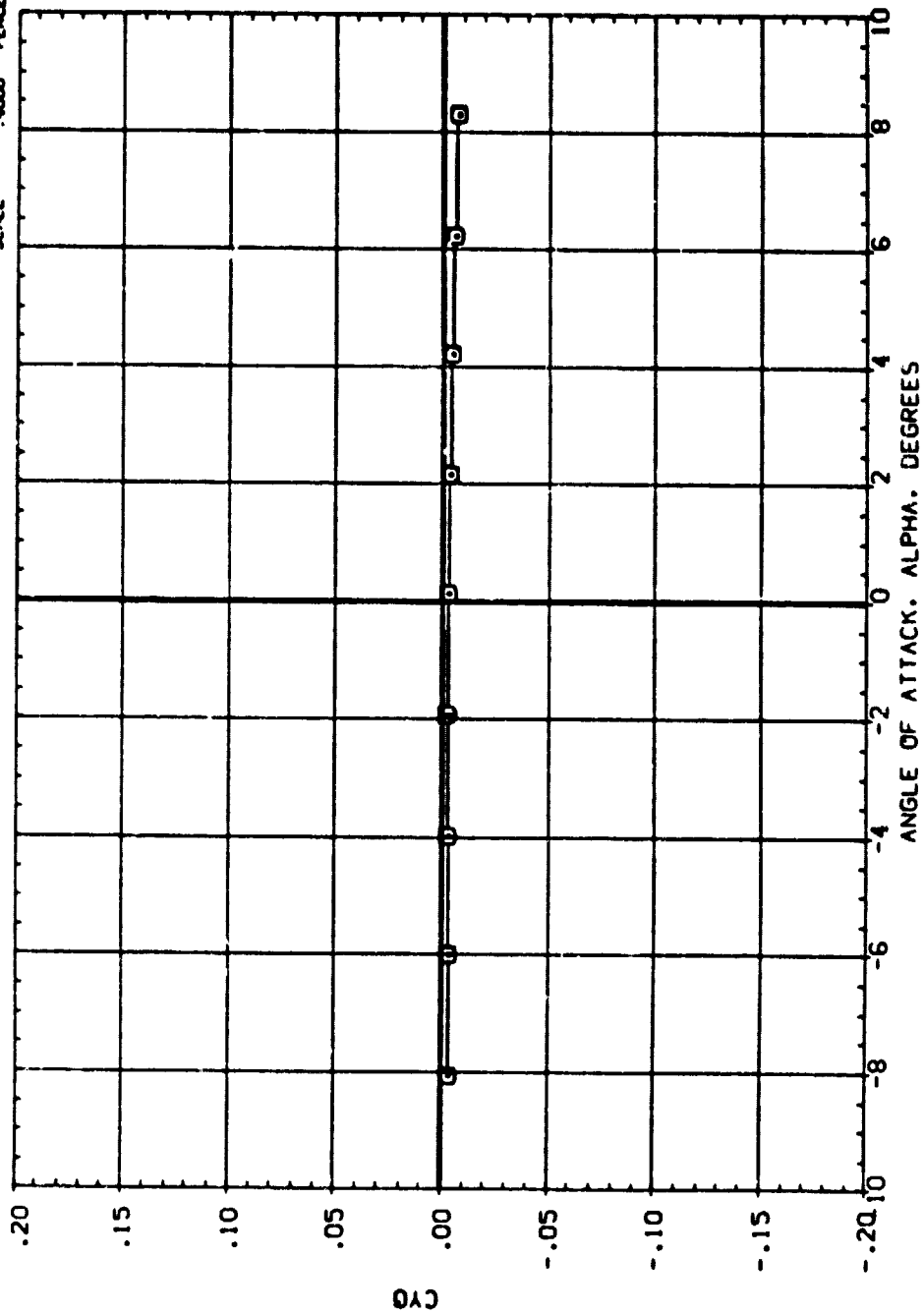


EFFECT OF GRIT ON WINGS

(C)MACH = .95

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION: FA28, MSFC TWT 656, CONF 1G. QZVZE ZNPAA11353 OR FA28, MSFC TWT 656, CONF 1G. QZVZE ZNPAA11353 OR

REFERENCE INFORMATION:
 SREF 5.1880 SQ. IN.
 LREF 3.1612 IN.
 BREF 2.7470 IN.
 WREF 2.7170 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE 4000 PERCENT

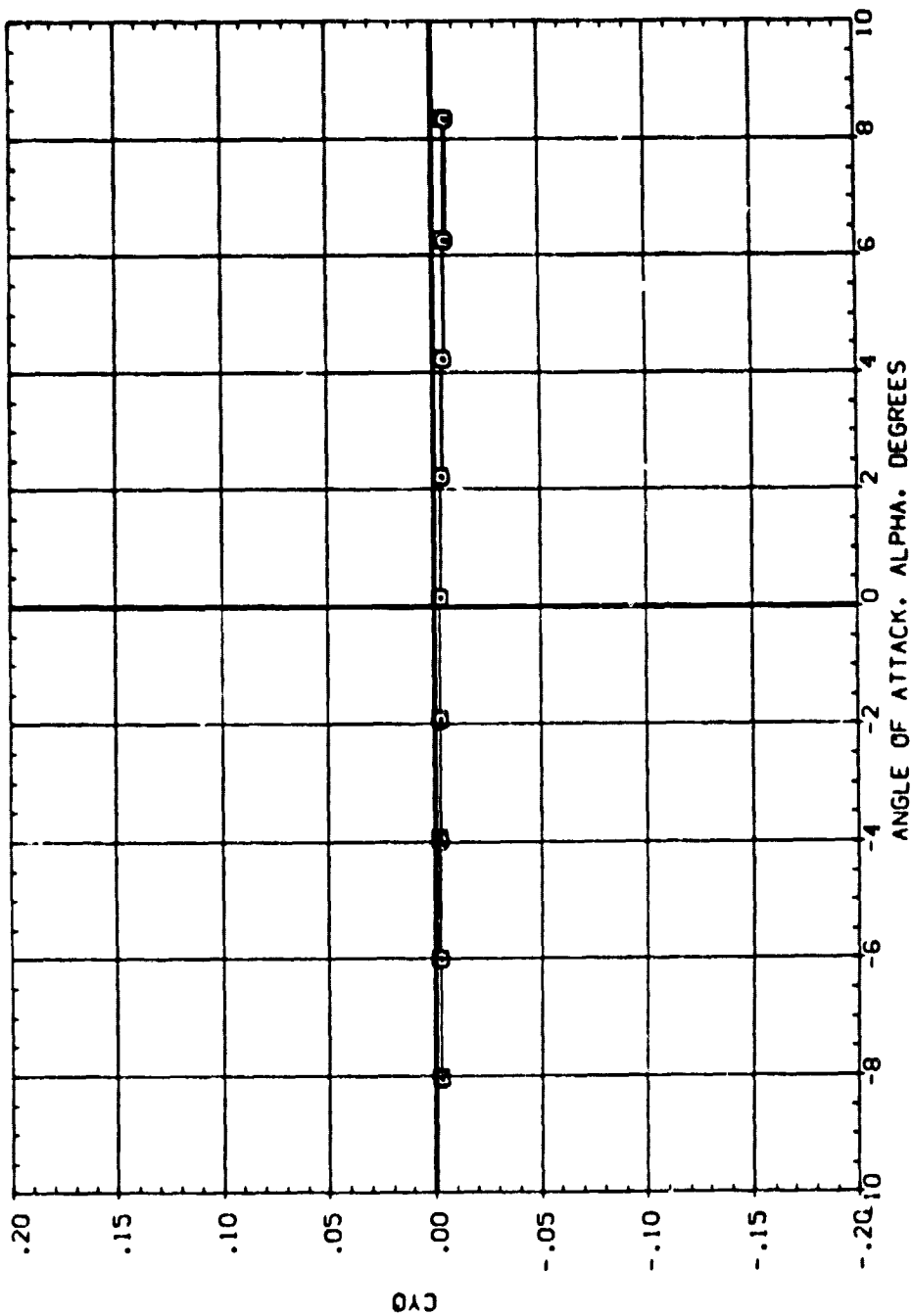


EFFECT OF GRIT ON WINGS

(D)MACH = 1.05

DATA SET SYMBOL: (FA2017) **B** CONFIGURATION DESCRIPTION: FA28. MSFC TVT 656. CONF 1G. QNZE200PAAT1253 GR
 FA28. MSFC TVT 656. CONF 1G. QNZE200PAAT1253 GR

REFERENCE INFORMATION:
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

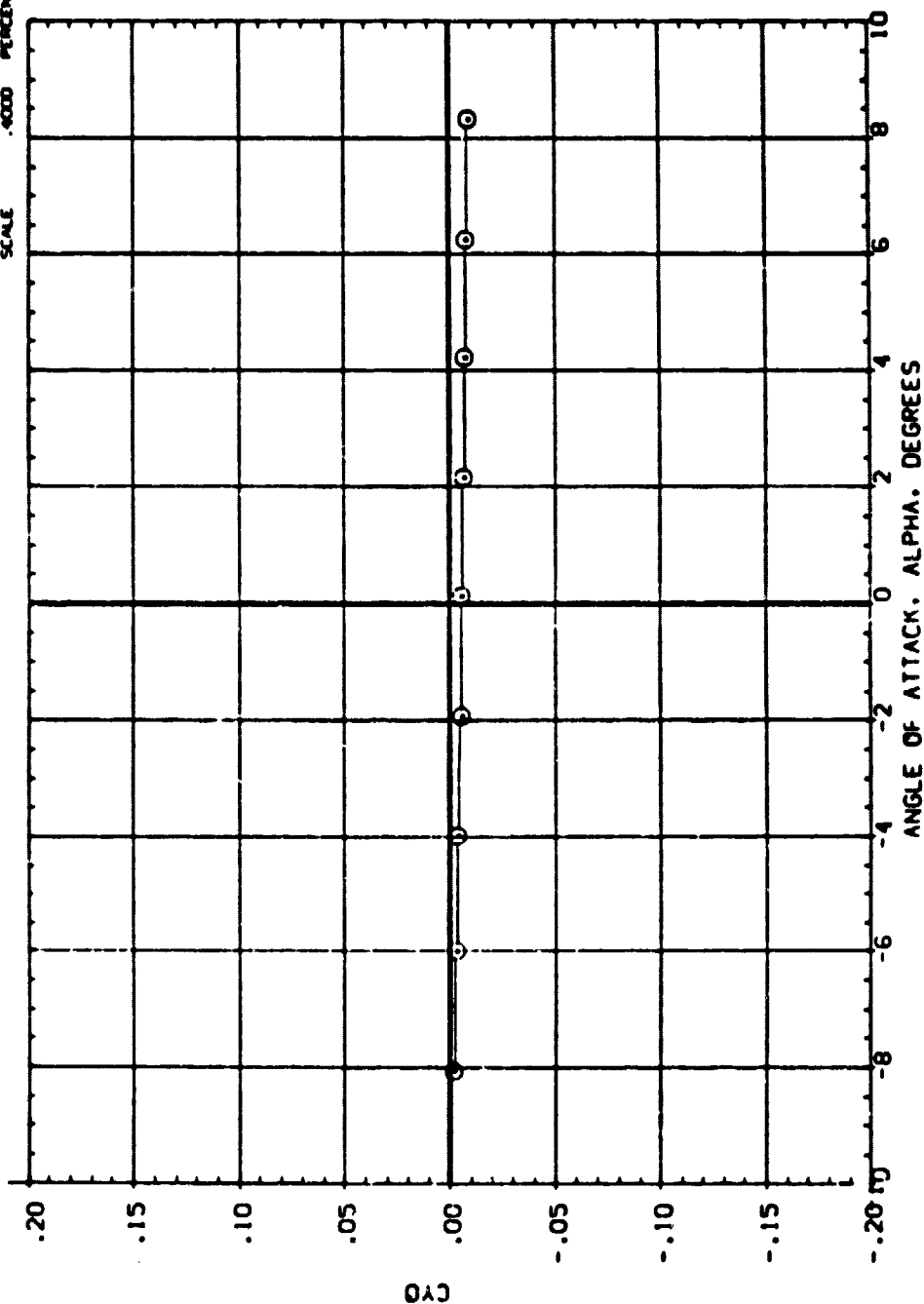


EFFECT OF GRIT ON WINGS

(E)MACH = 1.10

DATA SET SYMBOL: 8
 (FA20B1) (FA20B1)
 CONFIGURATION DESCRIPTION: FA20, MSFC, TWT, 652, CONF: 0, 0202E200A11353
 DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF: 8.1280 IN.
 LREF: 8.1612 IN.
 MREF: 3.7970 IN.
 VREF: 2.7120 IN.
 WREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT

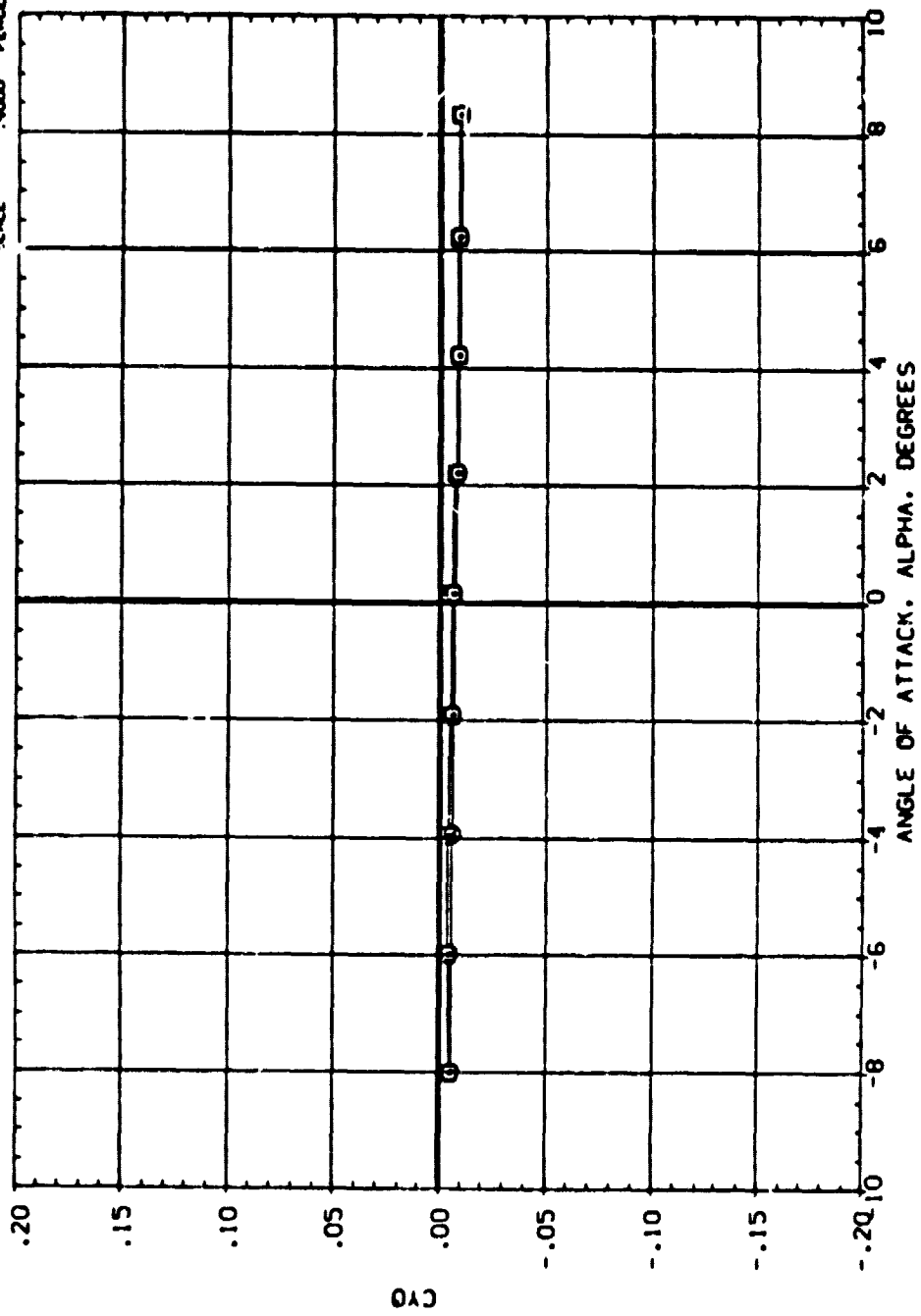


EFFECT OF GRIT ON WINGS

(F)MACH = 1.15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(FA280)	FA28. MSC TVT 65S. CONFIG.
(FA281)	FA28. MSC TVT 65S. CONFIG.

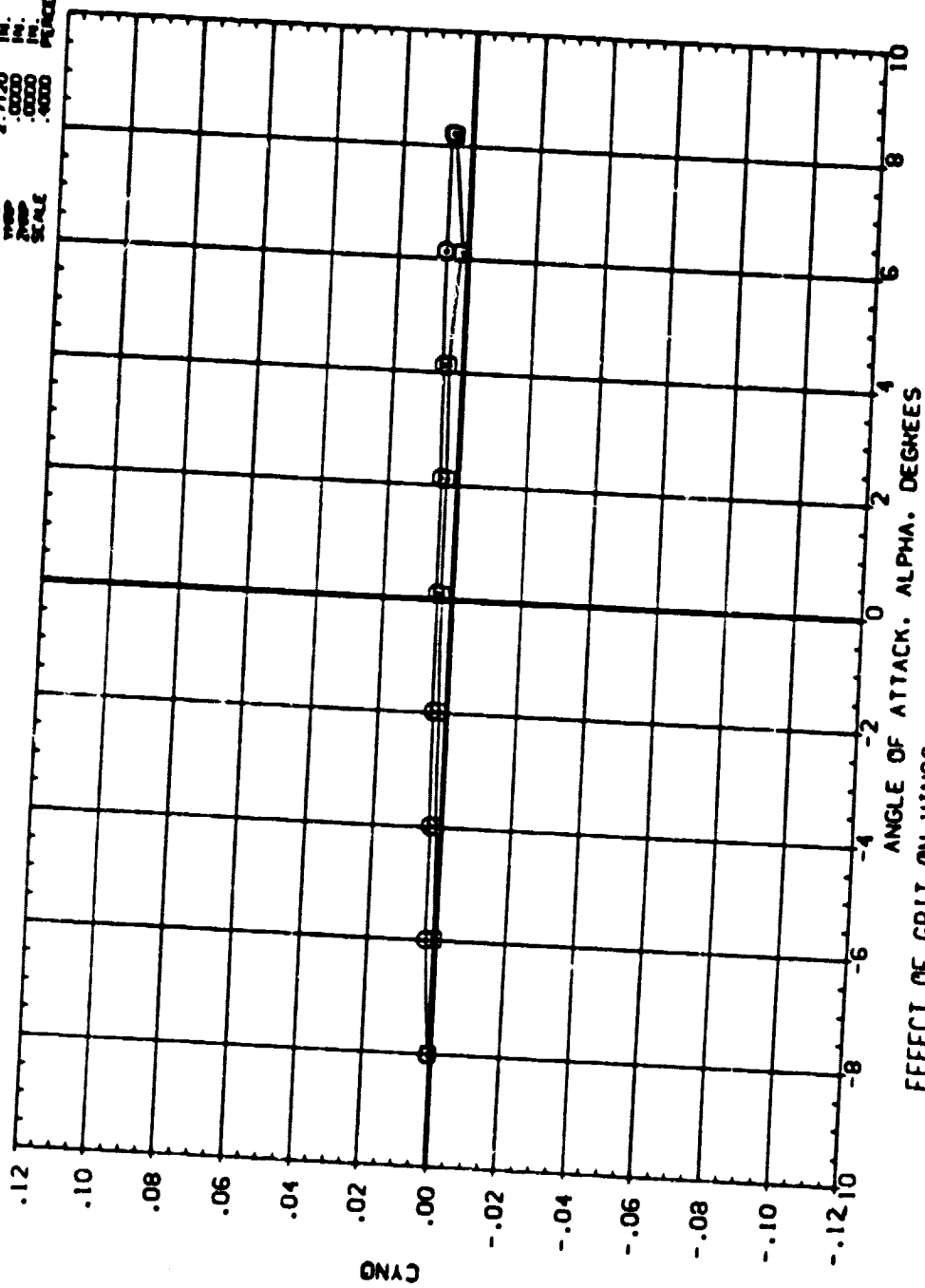
REFERENCE INFORMATION	
REF	6.1980 IN
LAST	5.1612 IN
REF	3.7470 IN
REF	2.7120 IN
REF	.0000 IN
REF	.0000 IN
SCALE	.0000 PER IN



(G)MACH = 1.25

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION:
 FA2B. MSFC TOT 656. CONF 16. ORVZPROPATT2B3
 FA2B. MSFC TOT 656. CONF 16. ORVZPROPATT2B3 OR

REFERENCE INFORMATION
 SET 5.1200 20. IN
 UNIT 5.1212 IN.
 UNIT 3.7170 IN.
 UNIT 2.7120 IN.
 UNIT .0000 IN.
 UNIT .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF GRIT ON WINGS

(A)MACH = .60

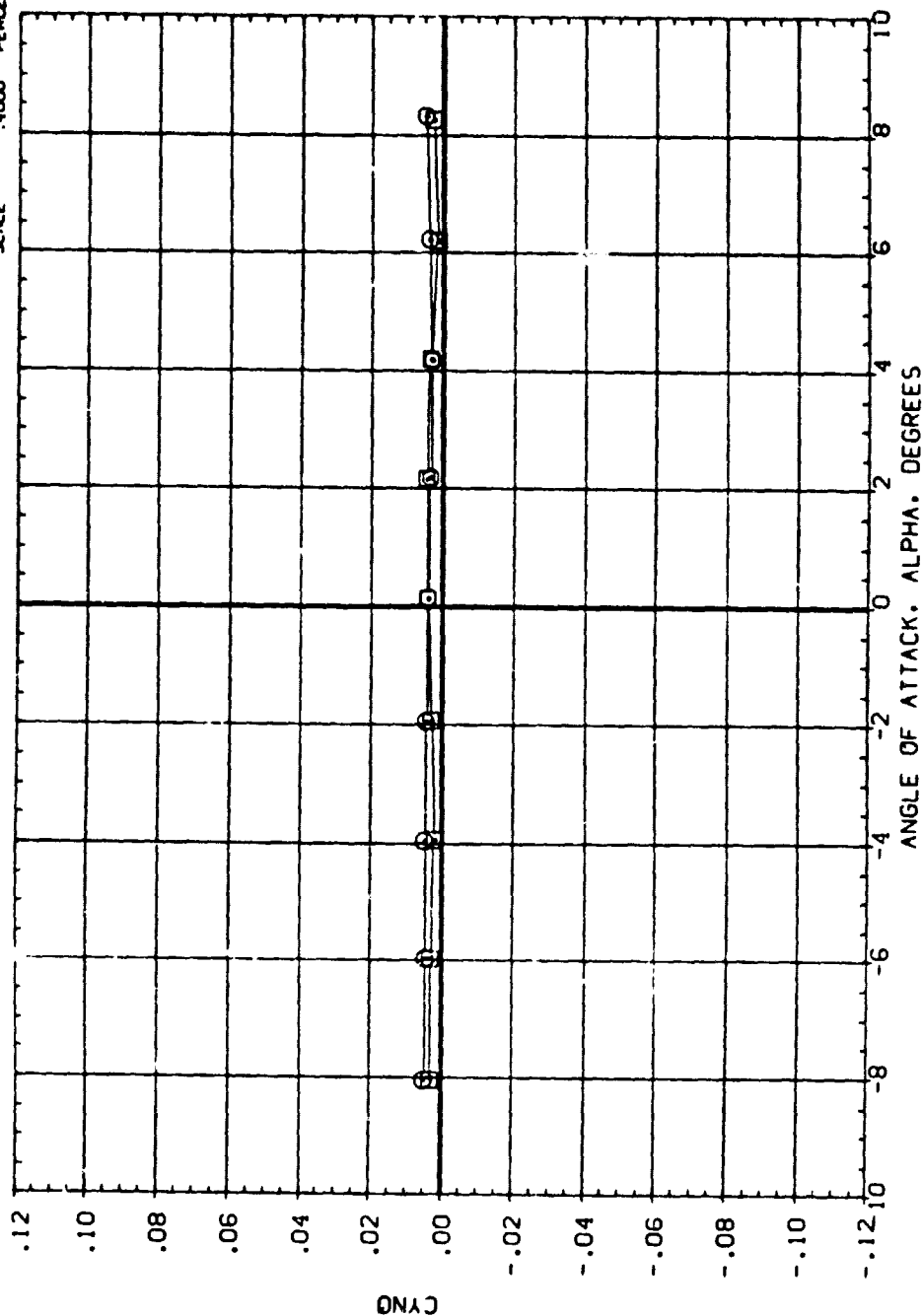
DATA SET SYMBOL: 8
 (FA2808)
 (FA2817)

CONFIGURATION DESCRIPTION

FA28. MSFC INT 656. CONF IG. 02N2E20NPAATT353 GR
 FA28. MSFC INT 656. CONF IG. 02N2E20NPAATT353 GR

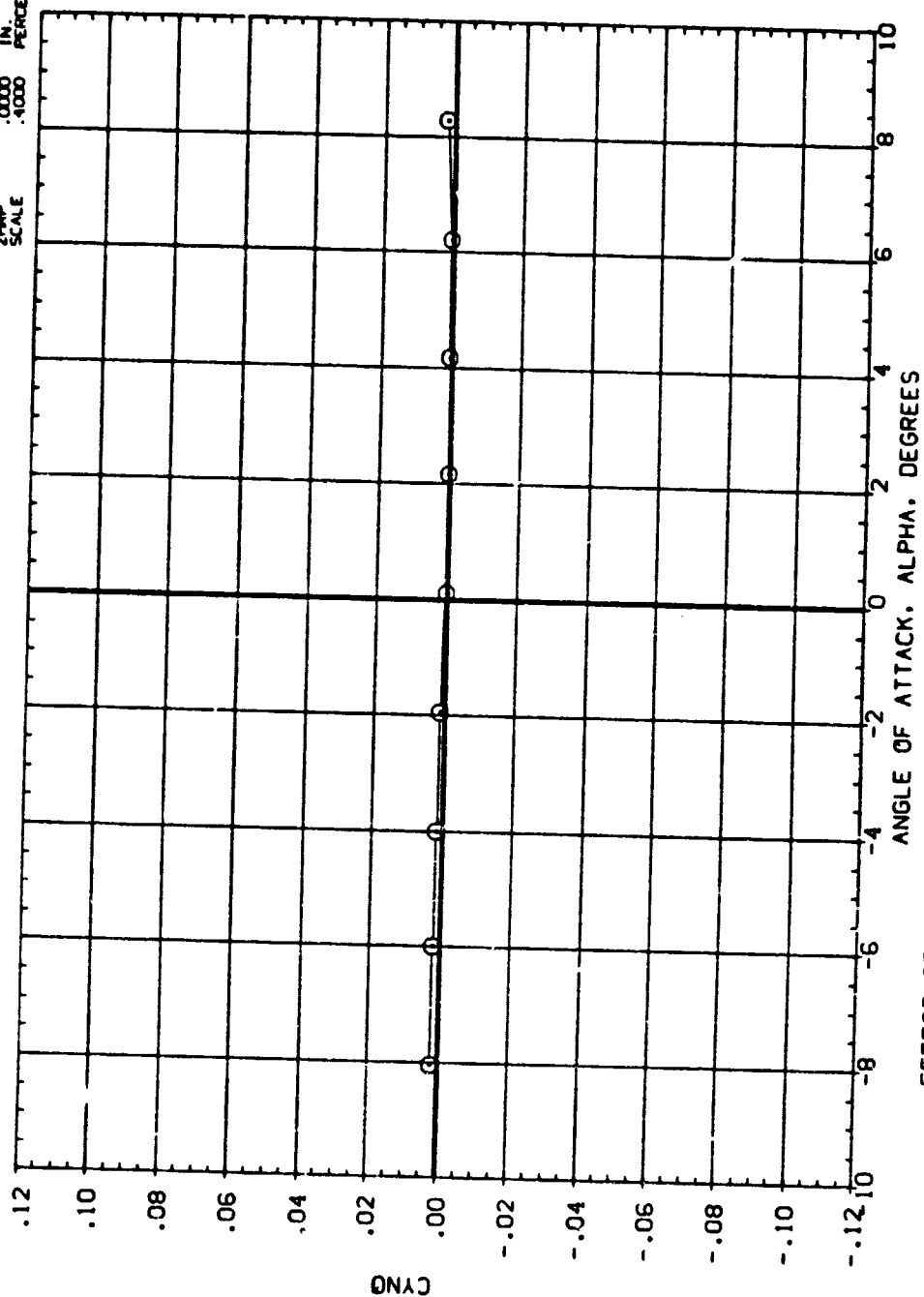
REFERENCE INFORMATION

SREF 5.1880 IN
 LREF 5.1612 IN
 SREF 3.7476 IN
 XMRP 2.7120 IN
 YMRP .0000 IN
 ZMRP .0000 IN
 SCALE .4000 PERCENT




DATA SET SYMBOL: FA28. MSFC INT 656. CONFIG. 02VZL2PAA11353
 (FA2808) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7170 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

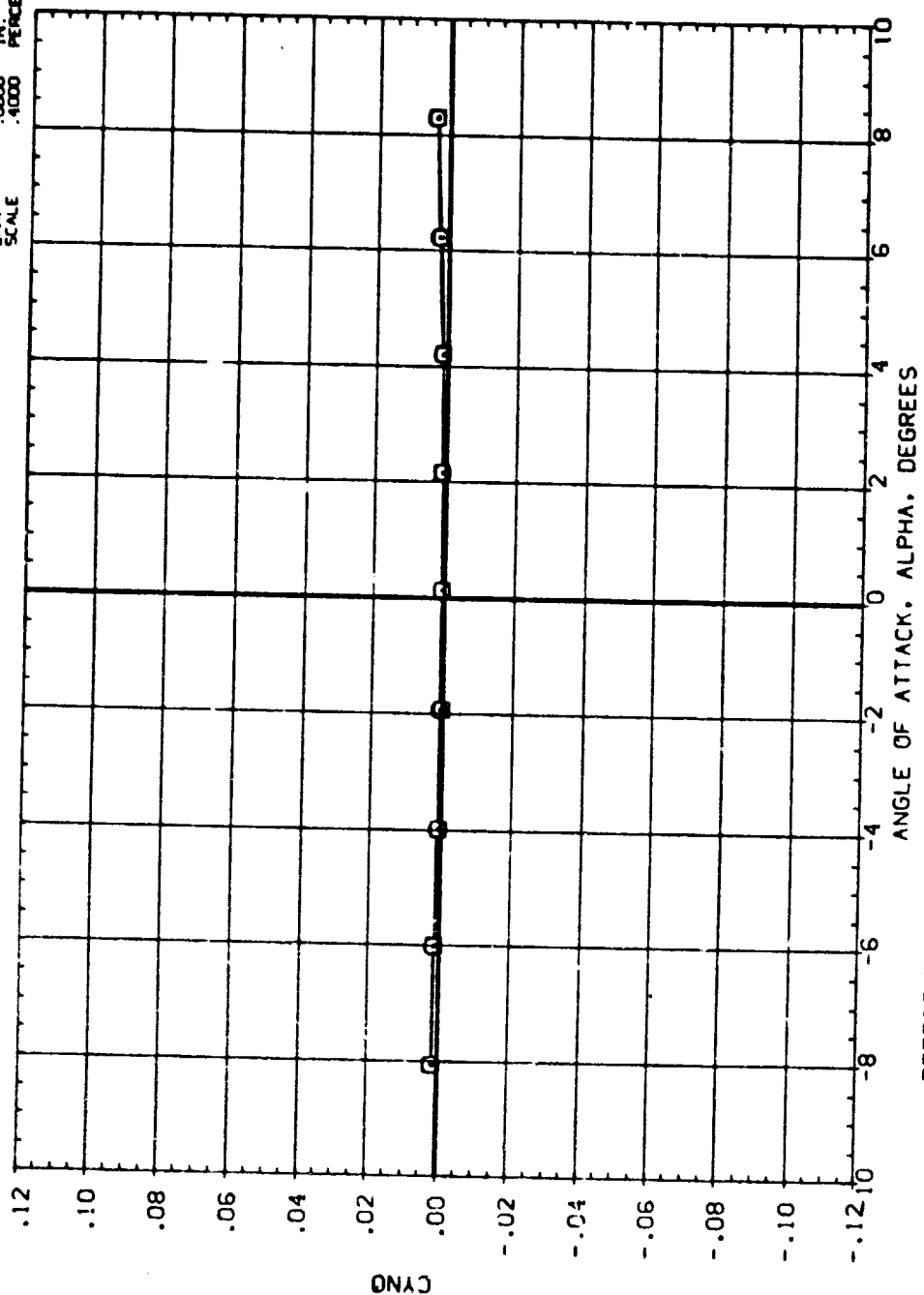


EFFECT OF GRIT ON WINGS

(C)MACH = .95

DATA SET SYMBOL: (FA2808) (FA2817)  CONFIGURATION DESCRIPTION: FA28. MSFC TWT 556. CONFIG: 02VZ2PMPATT753 GR FA28. MSFC TWT 556. CONFIG: 02VZ2PMPATT753 GR

REFERENCE INFORMATION
SREF 5.1980 IN
LREF 5.1612 IN
BREF 3.7470 IN
XREF 2.7120 IN
YREF .0000 IN
ZREF .0000 IN
SCALE .4000 PERCENT

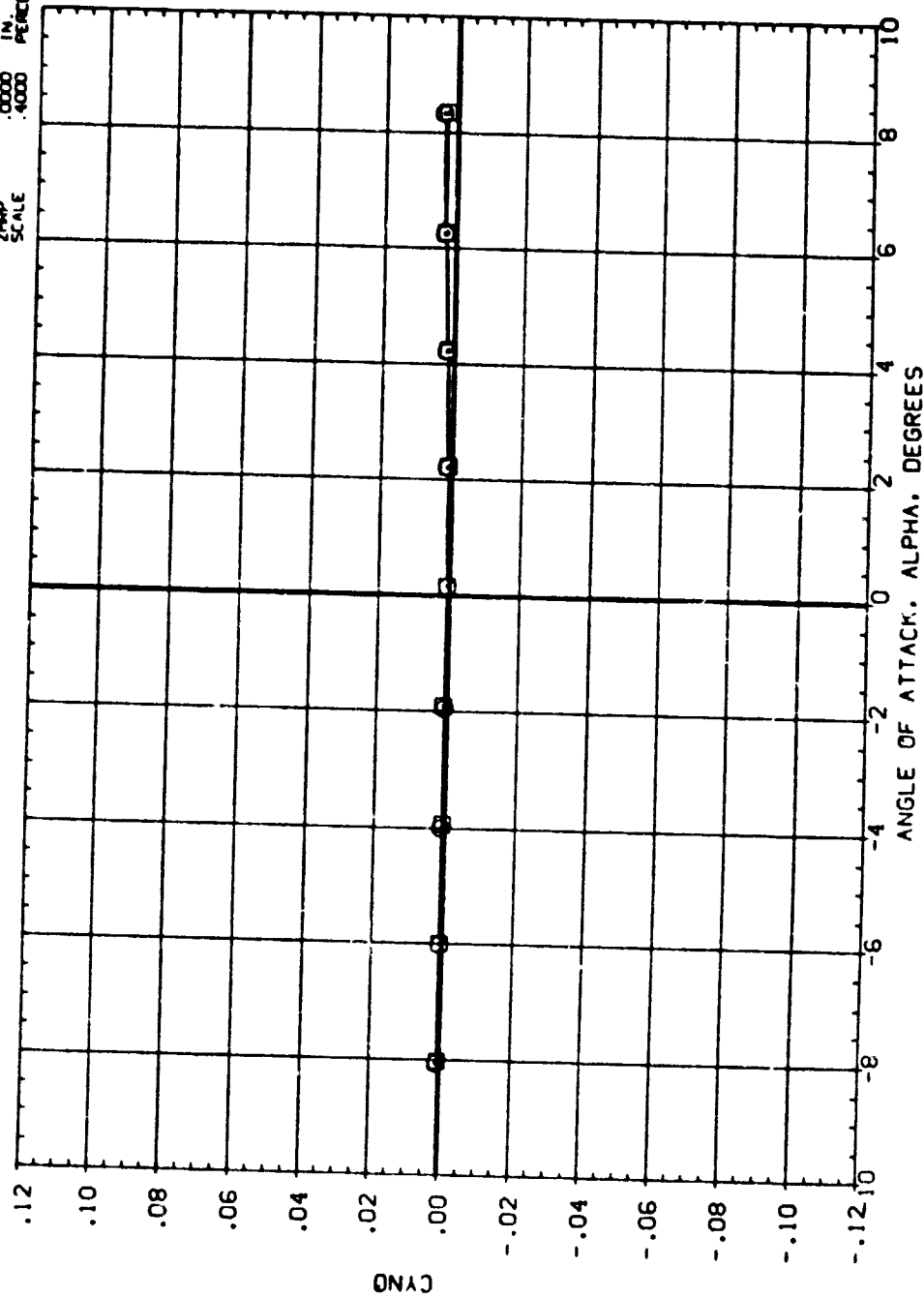


EFFECT OF GRIT ON WINGS

(0)MACH = 1.05

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (FA2808) 8 FA28. MSEC INT 656. CONF IG. 02VZ22M0PAATT353 GR
 (FA2817) FA28. MSEC INT 656. CONF IG. 02VZ22M0PAATT353 GR

REFERENCE INFORMATION
 SREF 6.1580 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 MREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

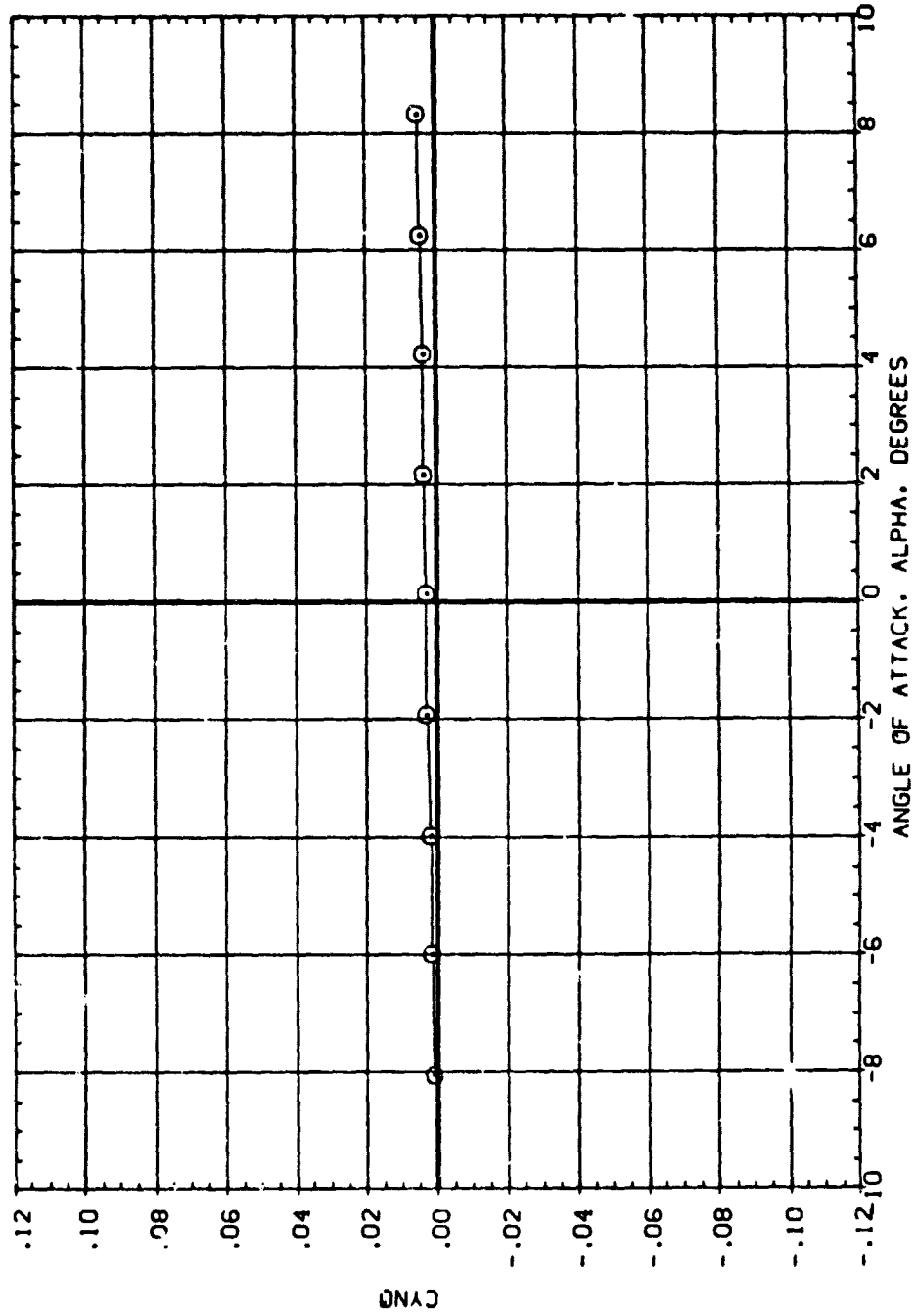


EFFECT OF GRIT ON WINGS

(MACH = 1.10)

DATA SET SYMBOL: FA28. MSFC TWT 656. CONFIG. 02VZ20PAAT1353
 (FA2808) DATA NOT AVAILABLE
 (FA2817)

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

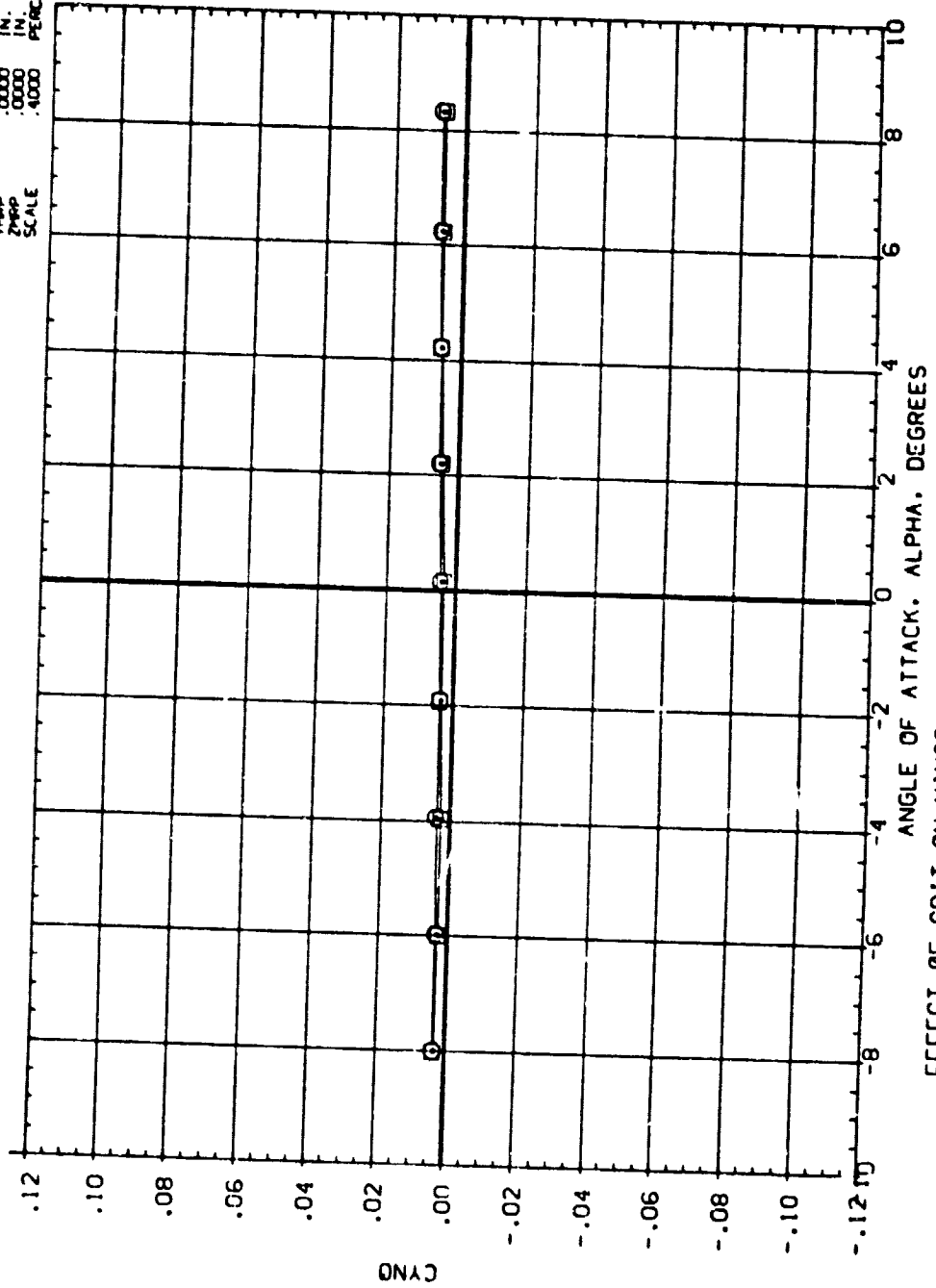


EFFECT OF GRIT ON WINGS

(F)MACH = 1.15

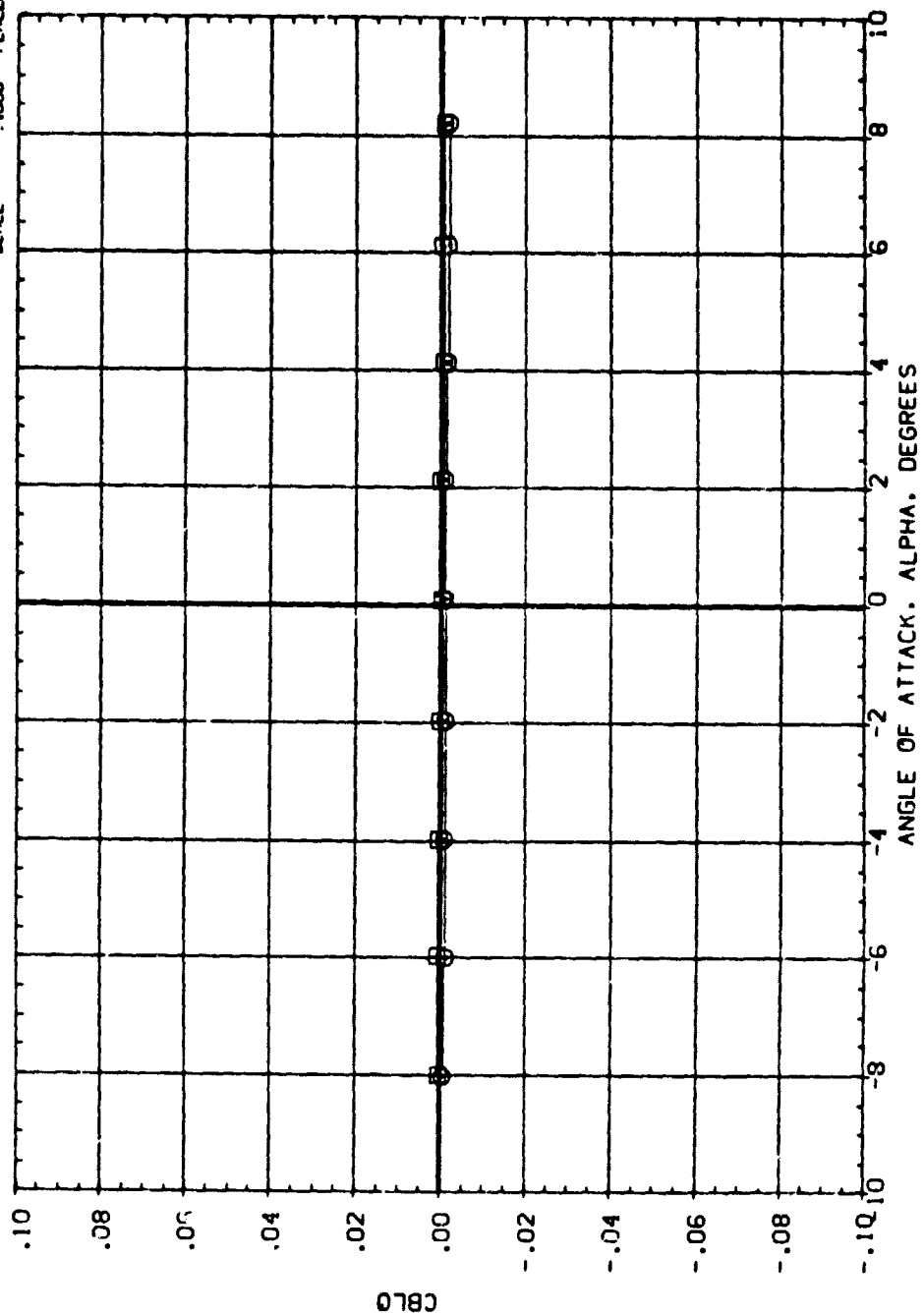
DATA SET SYMBOL: 8
 (FA2808) (FA2817)
 CONFIGURATION DESCRIPTION:
 FA28. MSFC TWT 656. CONF IG. DNZLZDMPAATT353
 FA28. MSFC TWT 656. CONF IG. DNZLZDMPAATT353 GR

REFERENCE INFORMATION
 SREF 6.1800 SQ. IN.
 LREF 3.1612 IN.
 BREF 3.7470 IN.
 XHREF 2.7120 IN.
 YHREF .0000 IN.
 ZHREF .0000 IN.
 SCALE .4000 PERCENT



DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2808) B FA28. MSFC TWT 656. CONF 16. 02NZE 200AT11353 OR
 (FA2817) B FA28. MSFC TWT 656. CONF 16. 02NZE 200AT11353 OR

REFERENCE INFORMATION
 SREF 6.1580 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 XREF .0000 IN.
 SCALE .4000 PERCENT

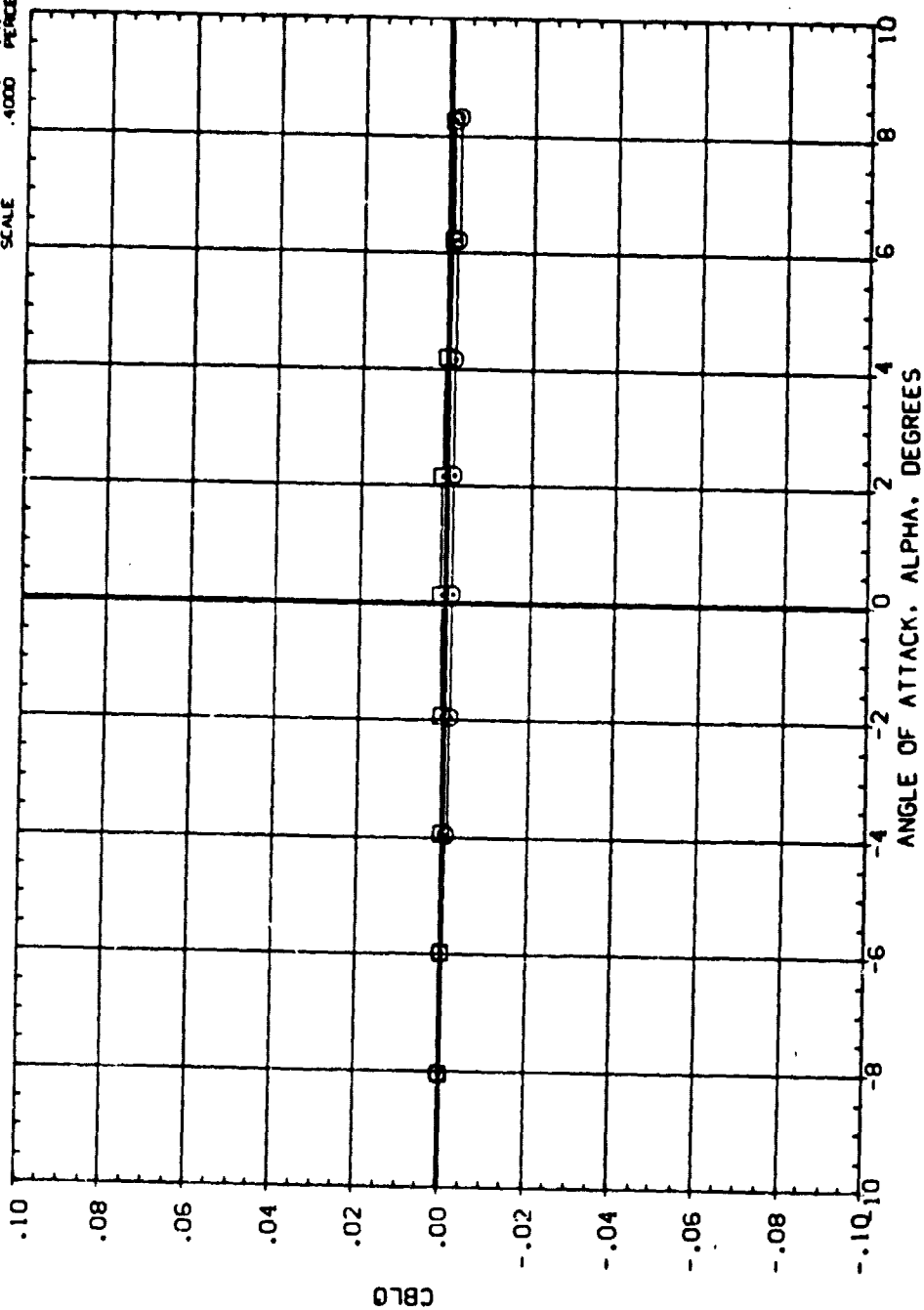


EFFECT OF GRIT ON WINGS

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2808) □ FA28. MSFC TWT 656. CONF'G. Q3V2E2NPAA11353
 (FA2817) □ FA28. MSFC TWT 656. CONF'G. Q3V2E2NPAA11353 OR

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

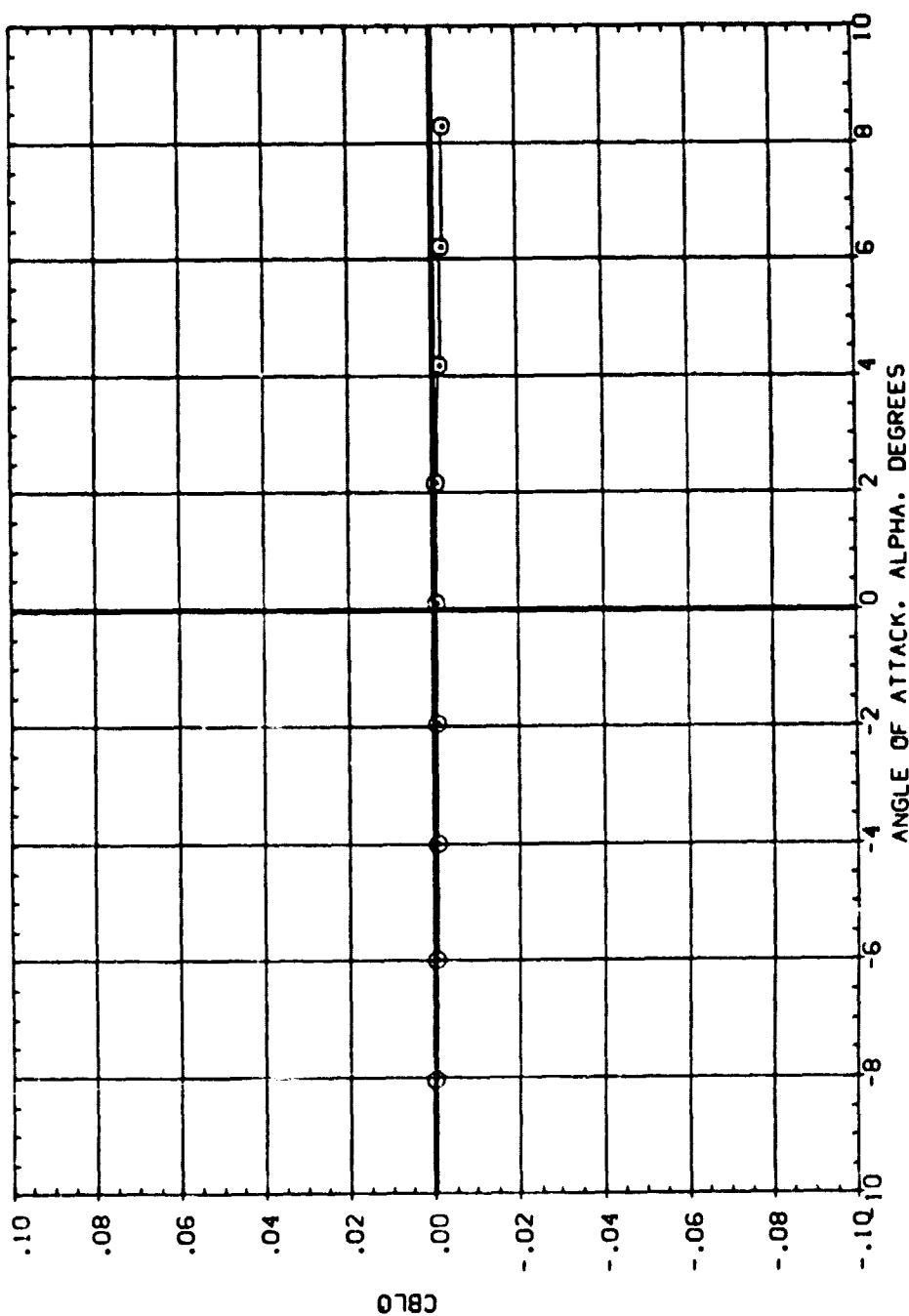


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION: FA28, MSFC, TWT 656, CONFIG. 02N2E20NPAAT135J
 (FA2808J) DATA NOT AVAILABLE
 (FA2817J)

REFERENCE INFORMATION:
 SREF 6.1580 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 PREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

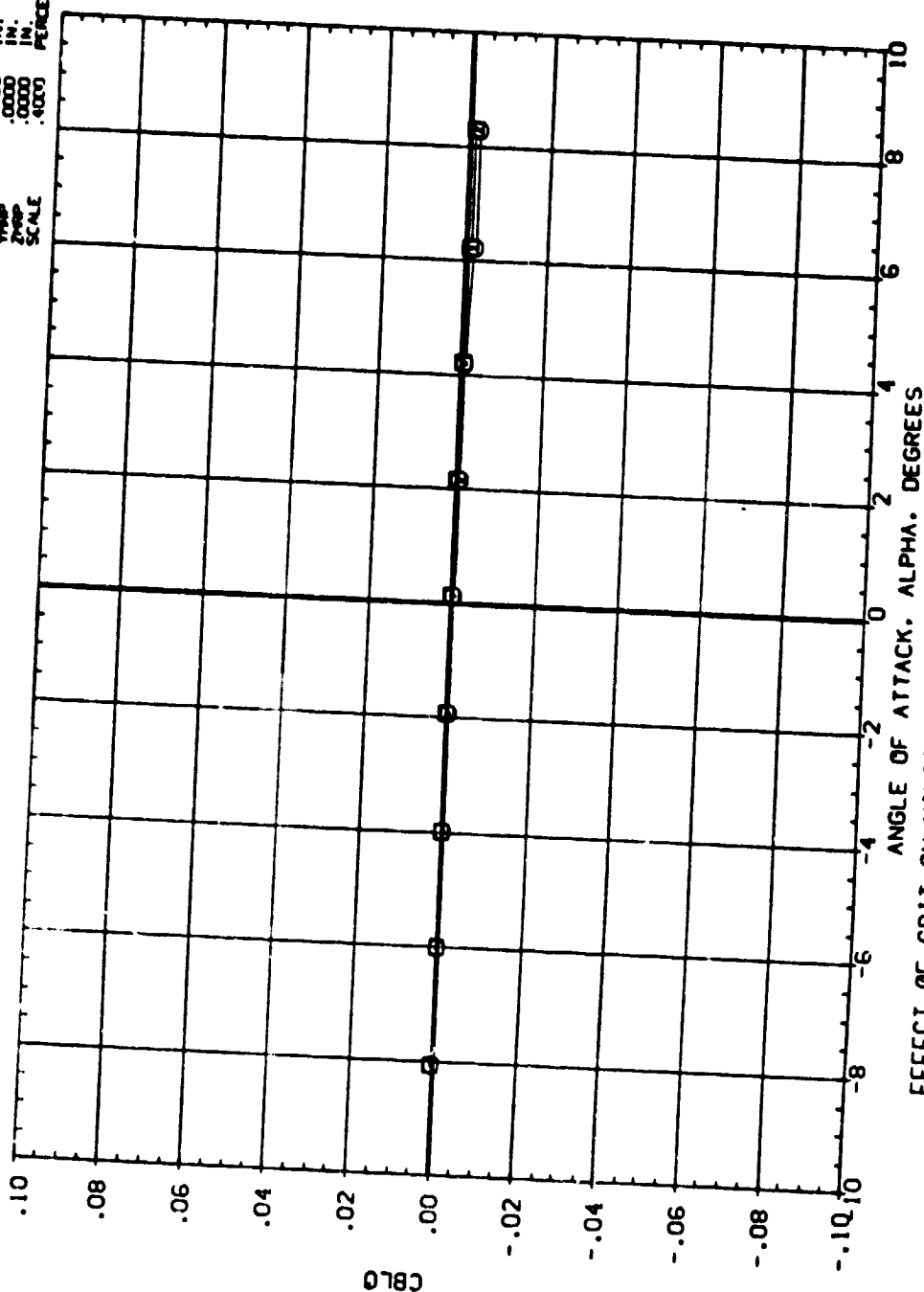


EFFECT OF GRIT ON WINGS


(C)MACH = .95

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2808) 8 FA28. MSFC TVT 656. CONF 1G. 02NZE2P0PATT1753
 (FA2817) 8 FA28. MSFC TVT 656. CONF 1G. 02NZE2P0PATT1753 OR

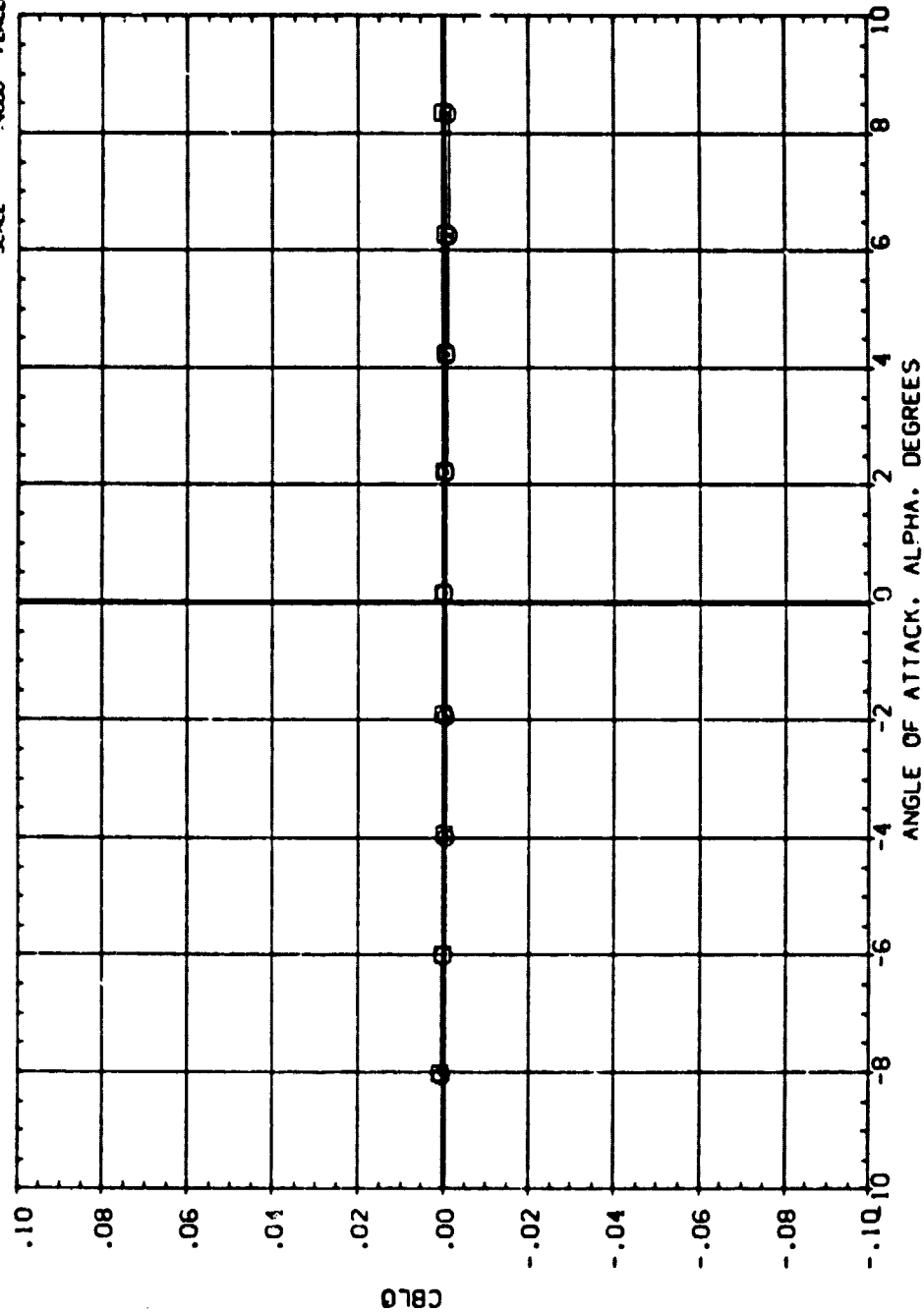
REFERENCE INFORMATION
 SREF 6.1580 50. IN
 LREF 5.1612 30. IN
 BREF 3.7470 10. IN
 XREF 2.7120 10. IN
 YREF .0000 10. IN
 ZREF .0000 10. IN
 SCALE .0001 PERCENT



EFFECT OF GRIT ON WINGS
 (O)MACH = 1.05

DATA SET SYMBOL: (FA2808) (FA2817)  CONFIGURATION DESCRIPTION: FA28. MSFC TWT 656. CONF 1G. 03N2E20NPAAT1353 OR FA28. MSFC TWT 656. CONF 1G. 03N2E20NPAAT1353 OR

REFERENCE INFORMATION:
SREF 5.1580 IN.
LREF 5.1612 IN.
BREF 3.7470 IN.
XREF 2.7120 IN.
YREF .0000 IN.
ZREF .0000 IN.
SCALE 4000 PERCENT

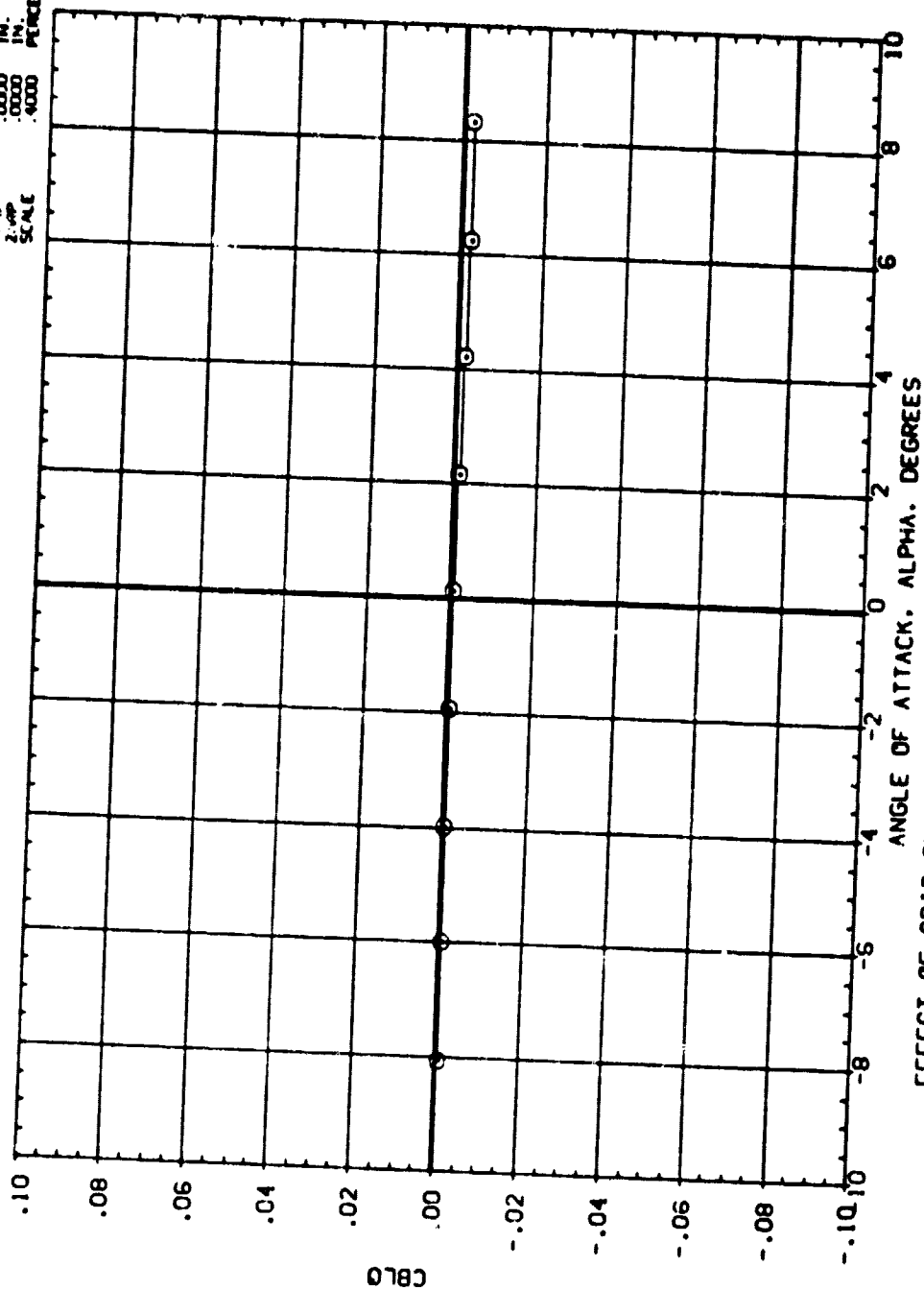


EFFECT OF GRIT ON WINGS

(E)MACH = 1.10

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA20, MSFC TW 656, CONFIG. 02VZ22P4ATT353
 (FA20B) DATA NOT AVAILABLE
 (FA2B17)

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 3.1612 IN.
 PREP 3.2470 IN.
 7.120 IN.
 2.0000 IN.
 SCALE .4000 PERCENT

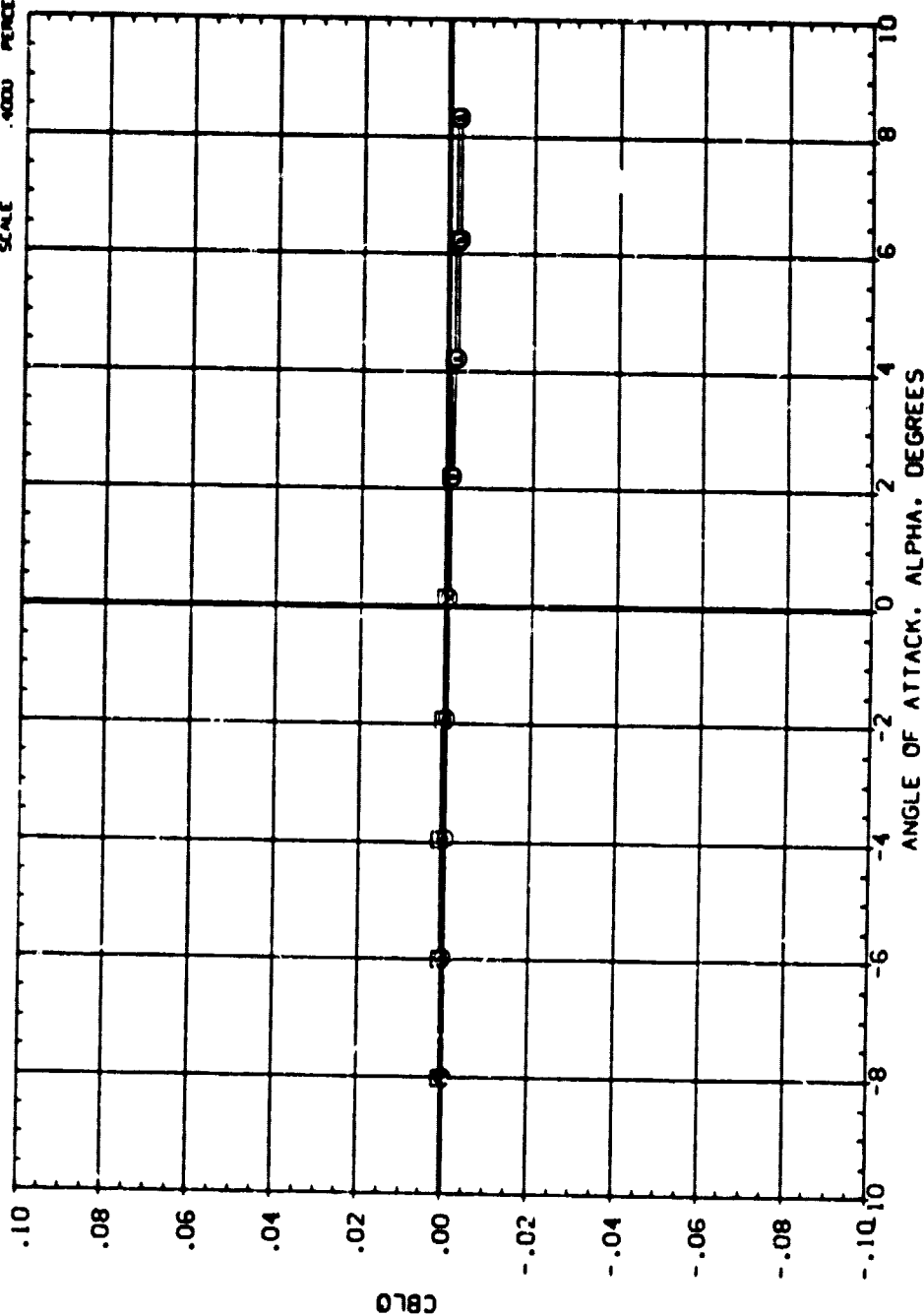


EFFECT OF GRIT ON WINGS

(F)MACH = 1.15

DATA SET SYMBOL: 8
 (FA208) FA20: MISC INT 656. CONFIG: CONVEZMPAATT353 OR
 (FA2017) FA20: MISC INT 656. CONFIG: CONVEZMPAATT353 OR

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 PREF .0000 IN.
 SCALE 4000 PERIOD

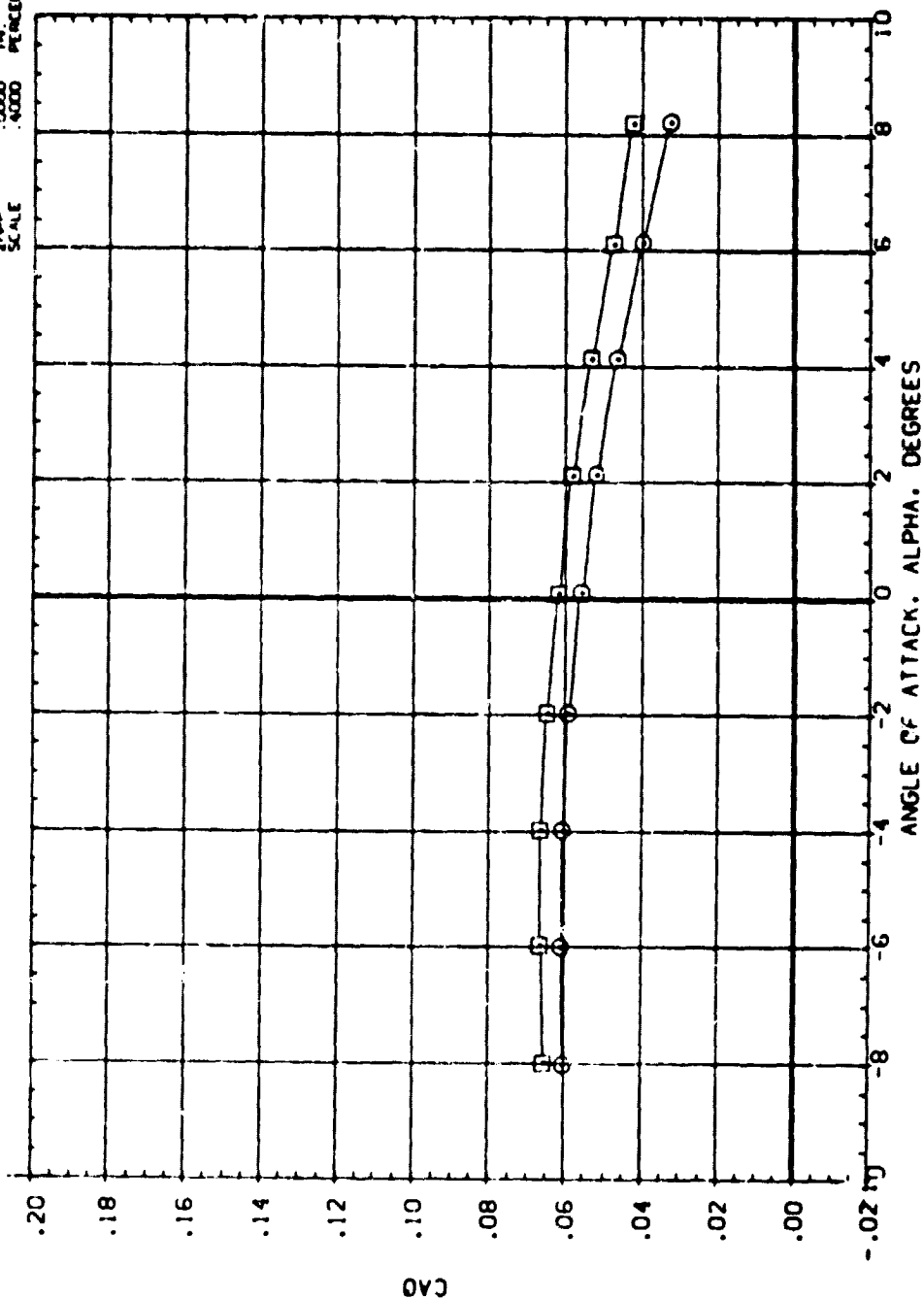


EFFECT OF GRIT ON WINGS

(G)MACH = 1.25

DATA SET SYMBOL: B
 (FA2012) (FA2013)
 CONFIGURATION DESCRIPTION:
 FA20: MISC TUT 556: CONF: QNZEJMPAAT1233
 FA20: MISC TUT 556: CONF: QNZEJMPAAT1233 OR

REFERENCE INFORMATION
 SREF: 6.1580 IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 XREF: 2.7120 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .4000 PERCENT

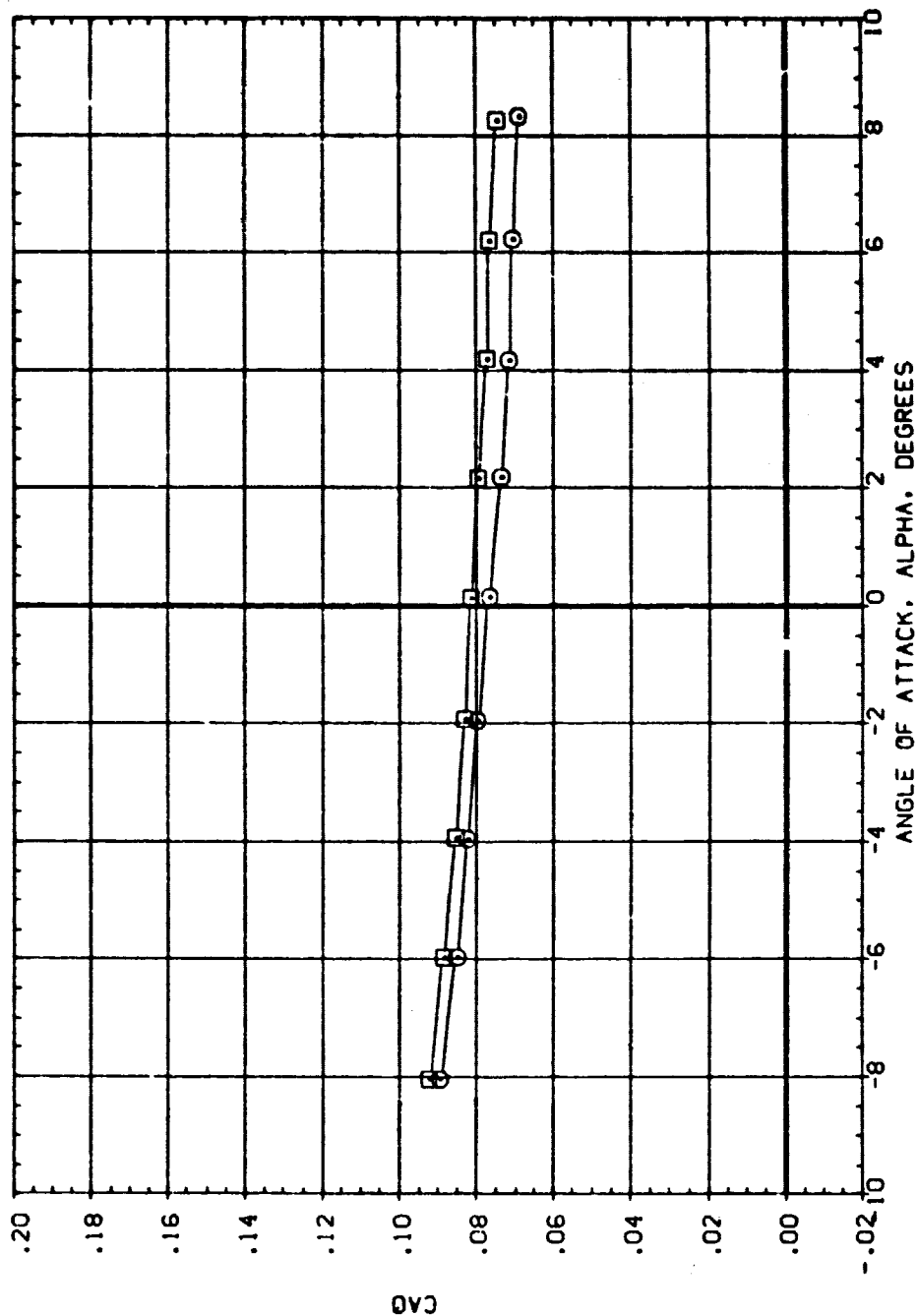


EFFECT OF GRIT ON :INGS

(A)MACH = .60

DATA SET SYMBOL: (FA2808) (FA2817)
 CONFIGURATION DESCRIPTION: FA28: MSFC TWT 655: CONF 16: GRVZ JPM011753 OR
 FA28: MSFC TWT 658: CONF 16: GRVZ JPM011753 OR

REFERENCE INFORMATION
 SREF: 6.1800 IN.
 LREF: 2.1812 IN.
 BREF: 2.7470 IN.
 VREF: 2.7120 IN.
 VPROP: .0000 IN.
 ZPROP: .0000 IN.
 SCALE: .4000 PERCENT



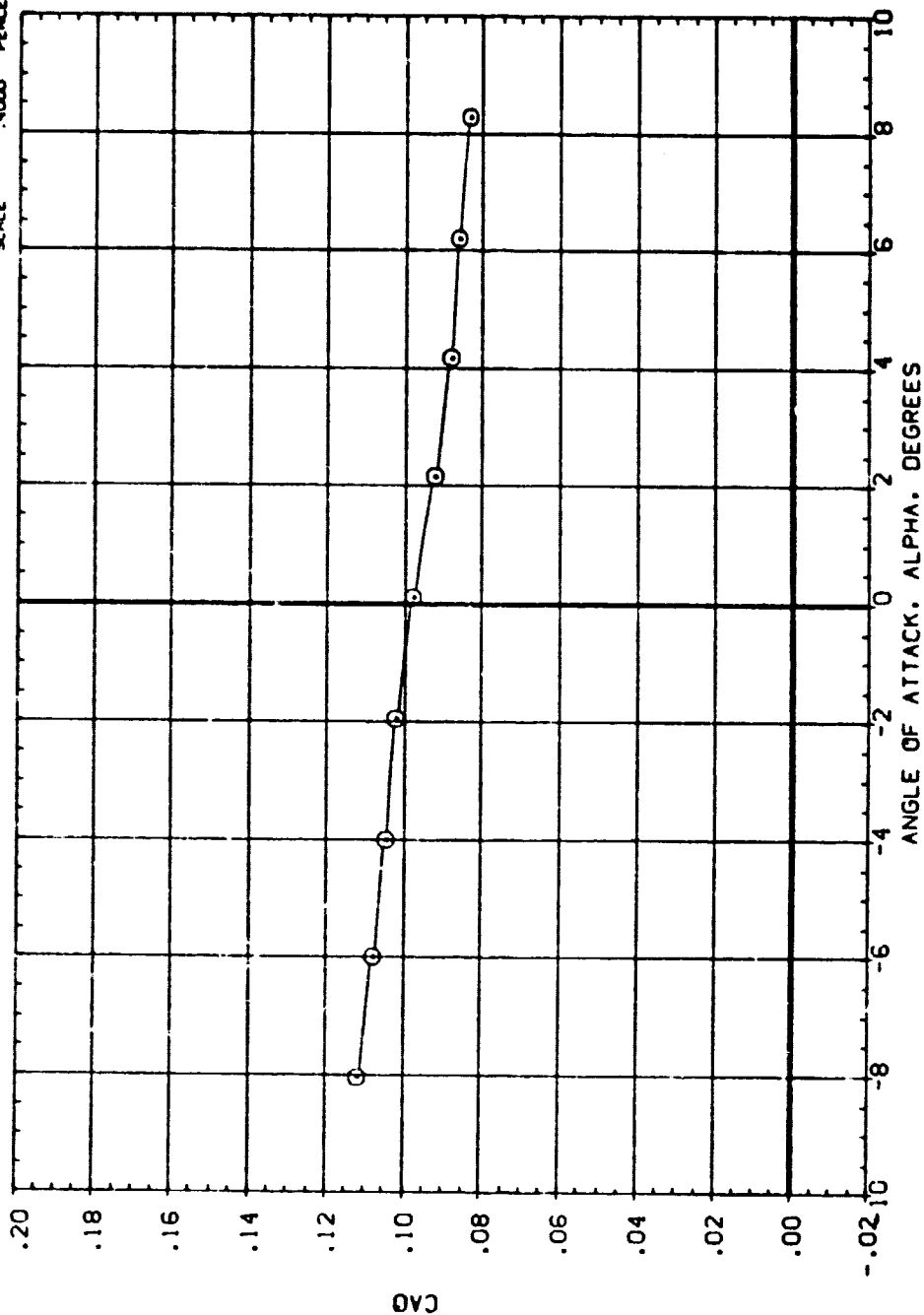
EFFECT OF GRIT ON WINGS

(B)MACH = .90

C-5

DATA SET SYMBOL: FA28. MSFC TWT 656. CONFIG. 02VZ23PAATT353
 (FA2808) □ DATA NOT AVAILABLE
 (FA2817)

REFERENCE INFORMATION
 SREF 6.1860 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.1416 IN.
 WREF 2.7120 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE 4000 PERCENT

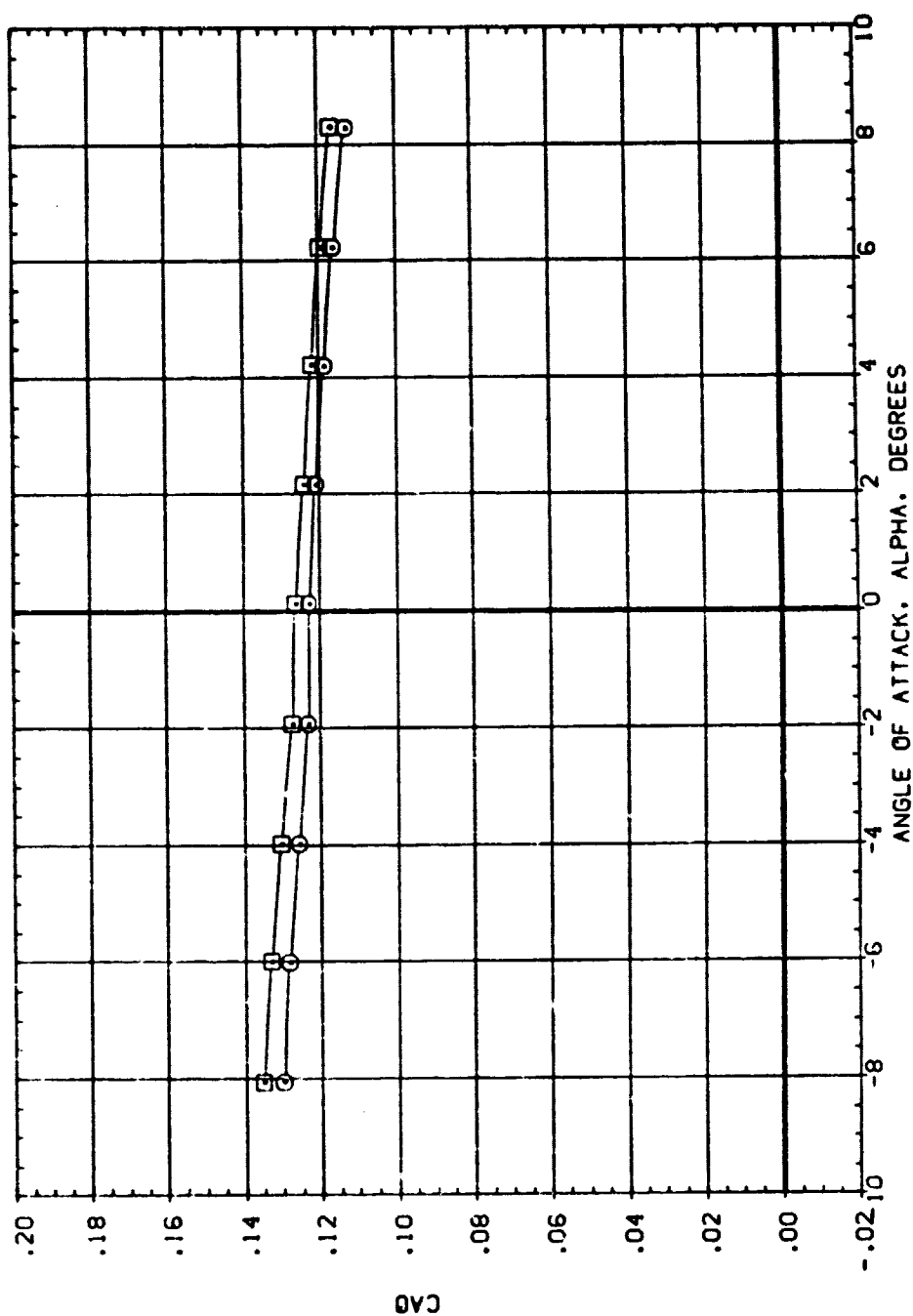


EFFECT OF GRIT ON WINGS

(C)MACH = .95

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
FA28, MFC TVI 656, CONF G.	02N2EPPAA1T353
FA28, MFC TVI 656, CONF G.	02N2EPPAA1T353 OR
FA2817	

REFERENCE	INFORMATION
SREF	1.000 IN.
LREF	5.10 IN.
BREF	3.7470 IN.
XREF	2.7120 IN.
VREF	.0000 IN.
ZREF	.0000 IN.
SCALE	.4000 PERCENT

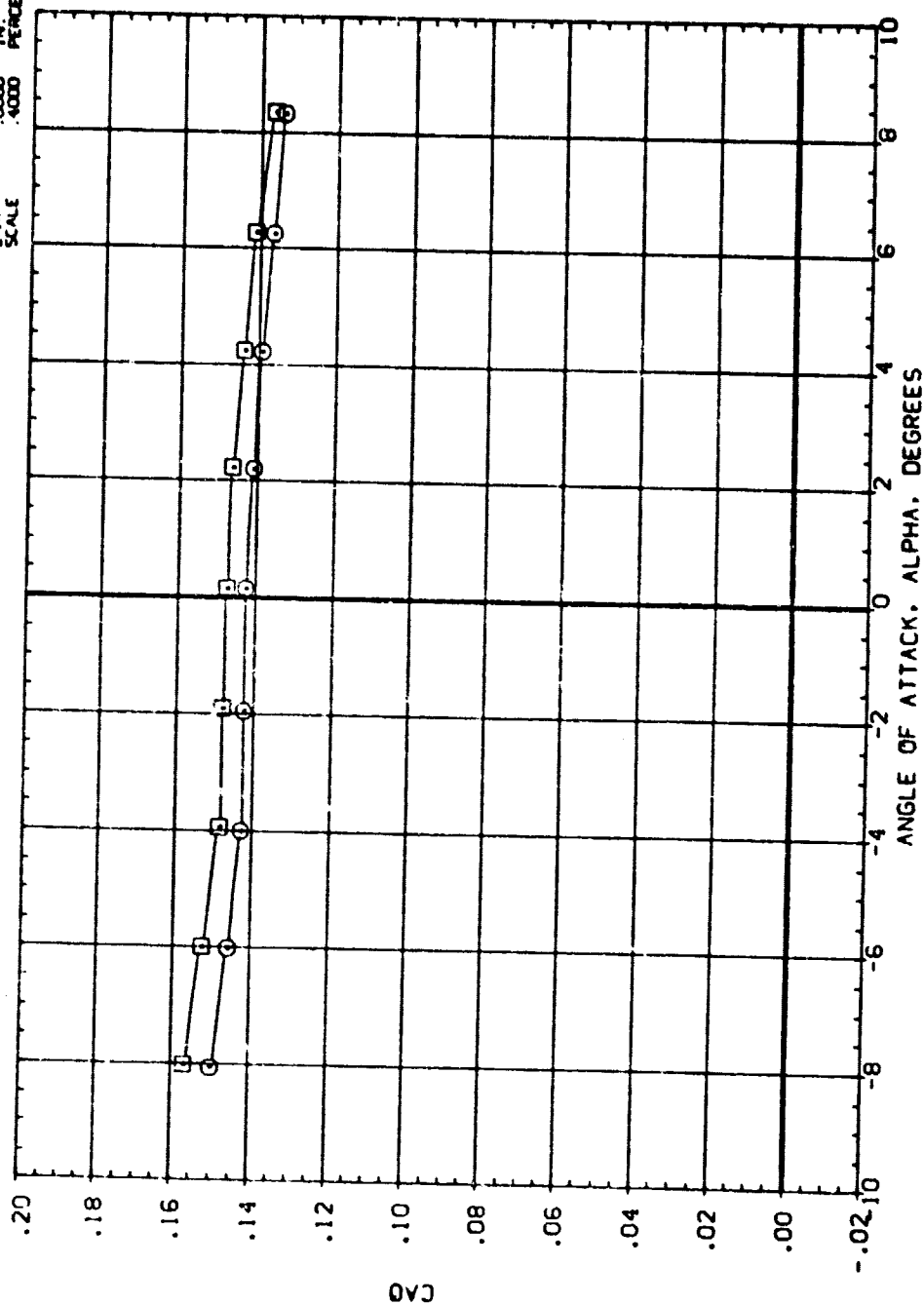


EFFECT OF GRIT ON WINGS

CO:MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION:
 (FA2809) □ FA28. MSFC TVT 656. CONF IG. 02VZ220PAAT1353 GR
 (FA2817) □ FA28. MSFC TVT 656. CONF IG. 02VZ220PAAT1353 GR

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

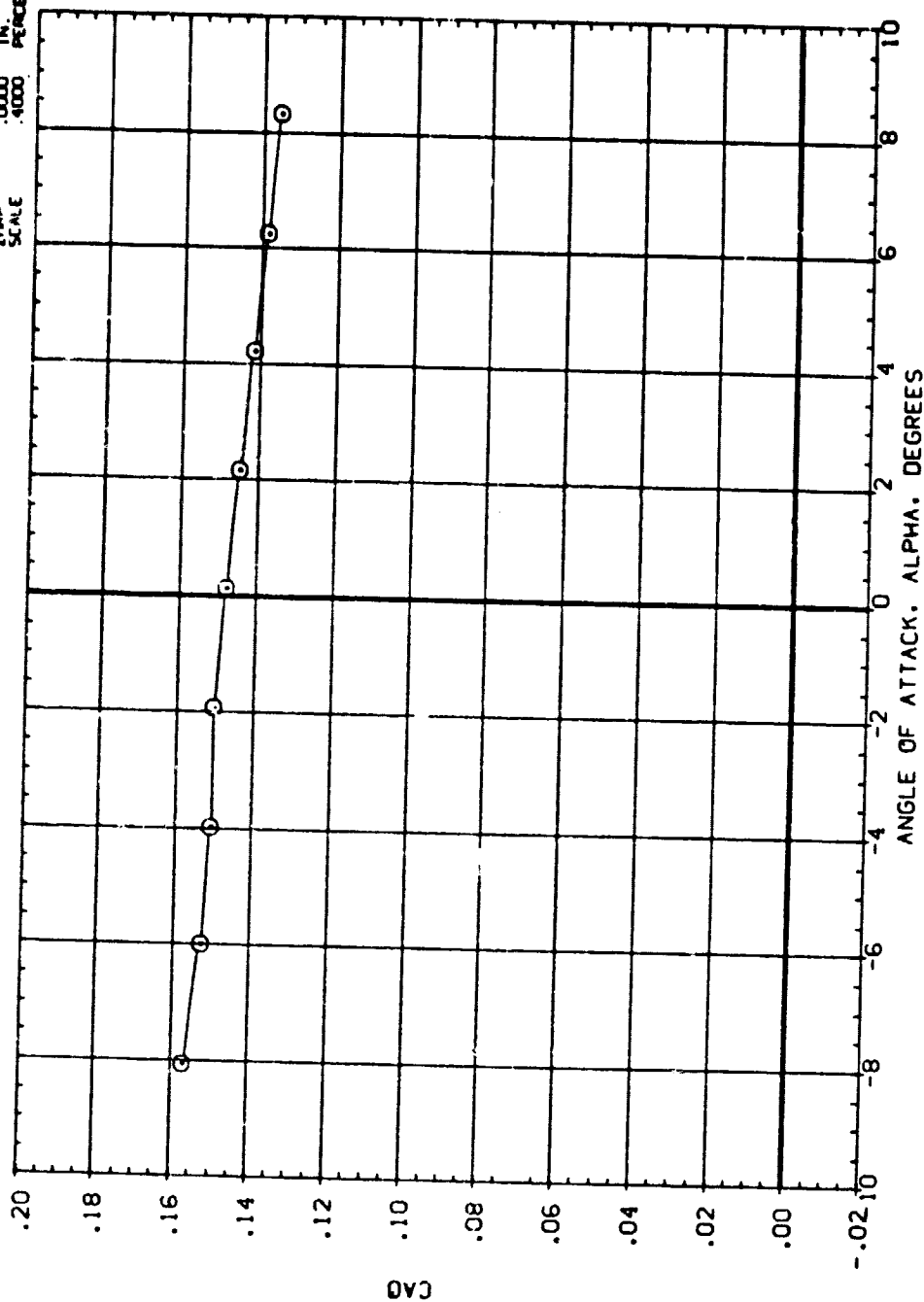


EFFECT OF GRIT ON WINGS

(E)MACH = 1.10


DATA SET SYMBOL: FA28. MSC TWT 656. CONFIG. 02/7E20PAATT353
 (FA2808) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE 4000 PERCENT

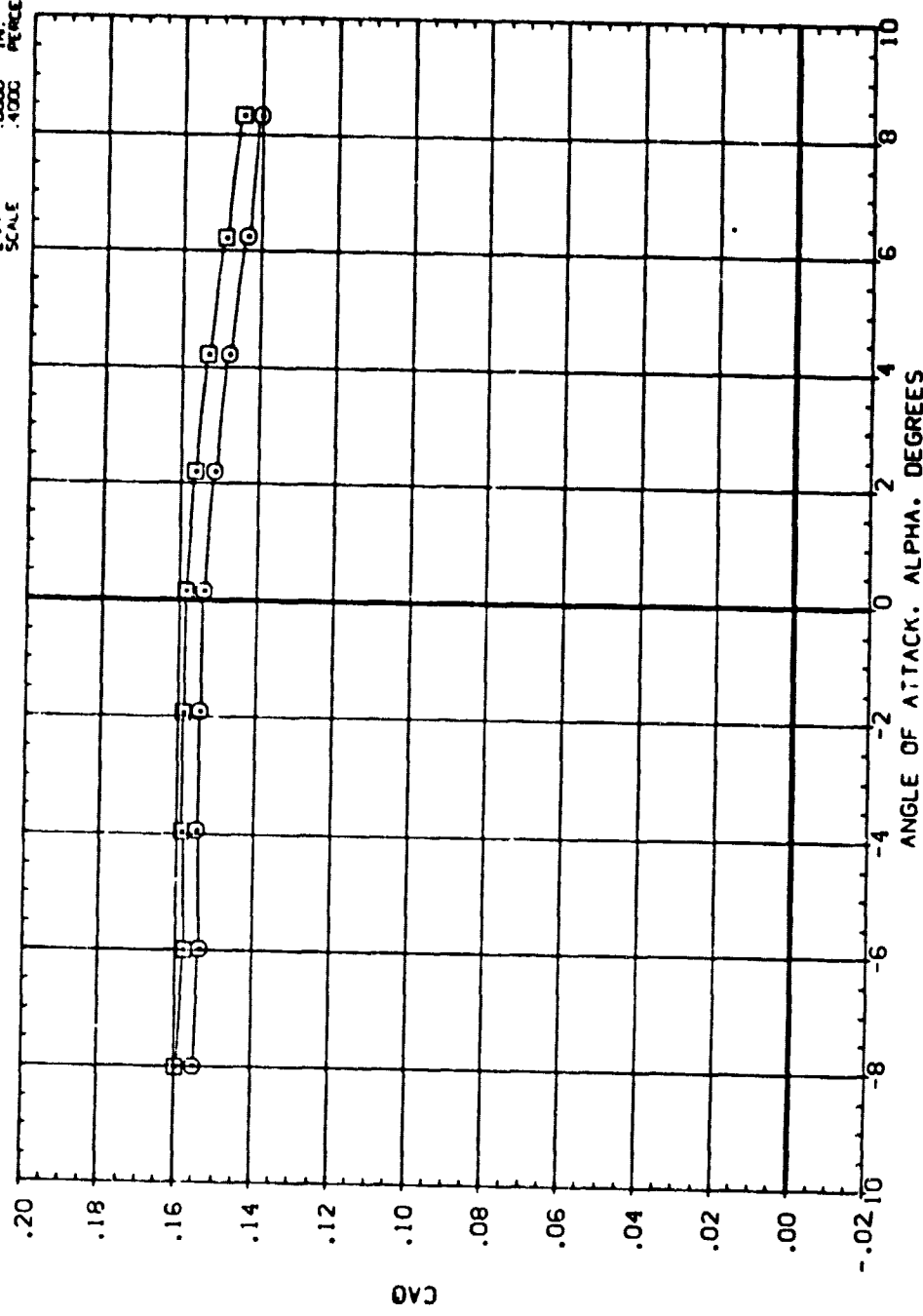


EFFECT OF GRIT ON WINGS

(F)MACH = 1.15



DATA SET SYMBOL: (FA2908)
 (FA2917)  CONFIGURATION DESCRIPTION:
 FA28. MSFC TVT 656. CONF. 10. 02NZE20PAA11253
 FA28. MSFC TVT 656. CONF. 10. 02NZE20PAA11253 GR

REFERENCE INFORMATION:
 SREF 5.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 JREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

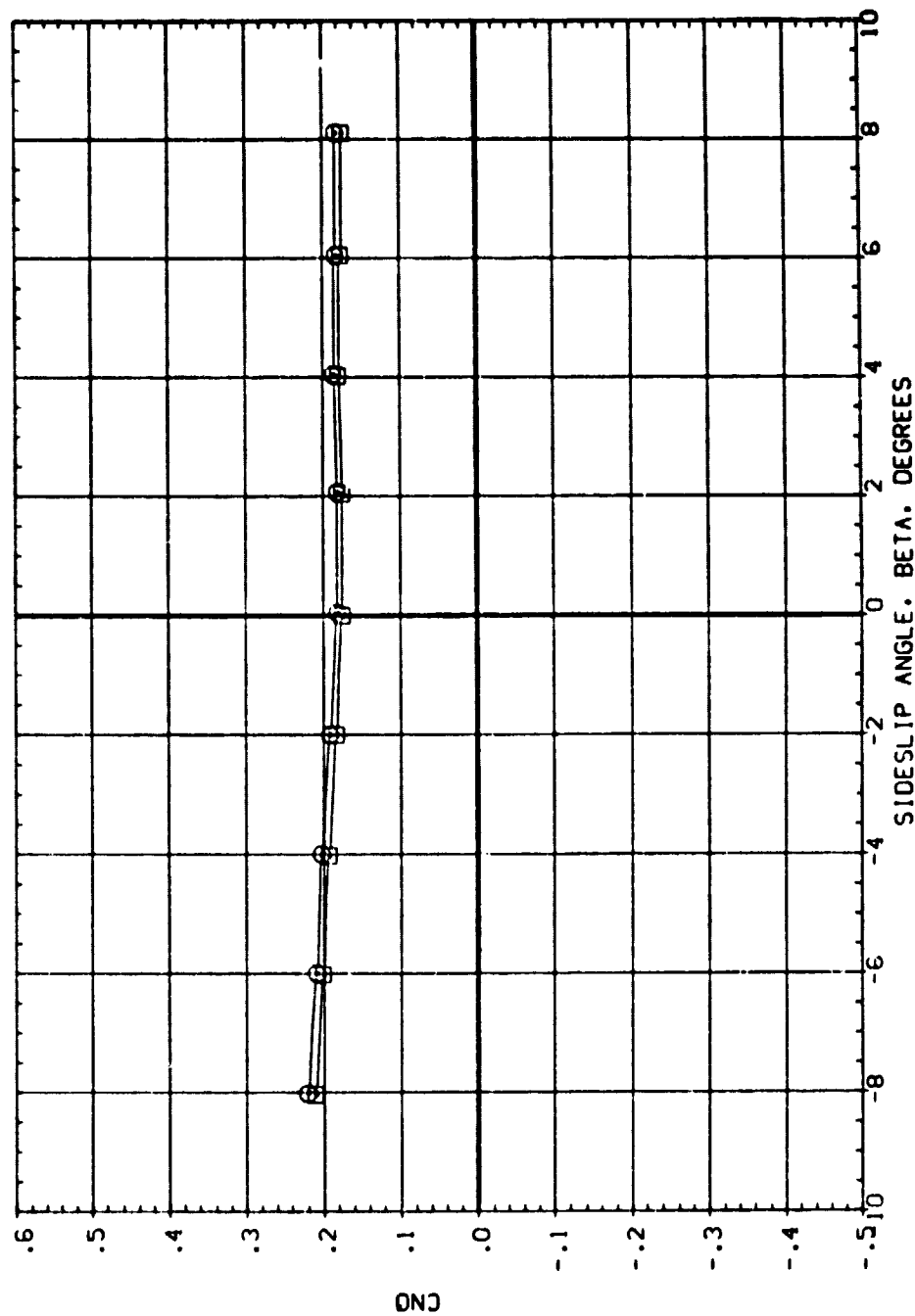


EFFECT OF GRIT ON WINGS

(G)MACH = 1.25

DATA SET SYMBOL: (FA2809)  CONFIGURATION DESCRIPTION: FA28. MSFC TWT 656. CONF IG: 02NZE2PAPATT353 OR (FA2816)  FA28. MSFC TWT 656. CONF IG: 02NZE2PAPATT353 OR

REFERENCE INFORMATION
 SREF 5.1560 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 JREF 2.7120 IN
 VREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

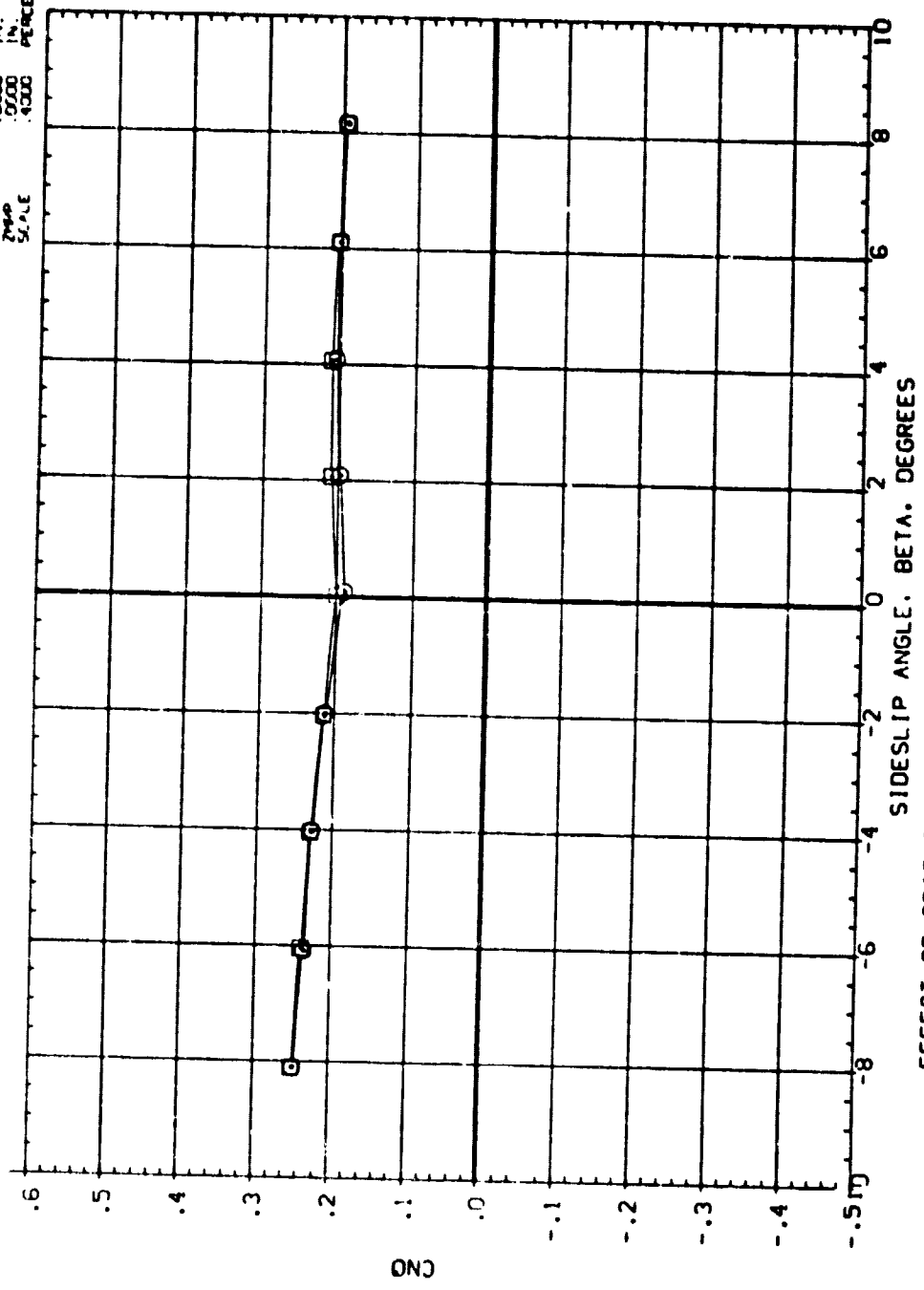


EFFECT OF GRIT ON WINGS

(A)MACH = .60

DATA SET SYMBOL: ☐ CONFIGURATION DESCRIPTION: FA28, MSFC TWT 656, CONF 1G: 02VZ2PAPAT7353 GR
 (FA28:6) ☐ FA28, MSFC TWT 656, CONF 1G: 02VZ2PAPAT7353 GR

REFERENCE INFORMATION
 SREF 5.1980 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMAP 2.7120 IN.
 YMAP .0000 IN.
 ZMAP .0000 IN.
 SCALE .0000 PERCENT

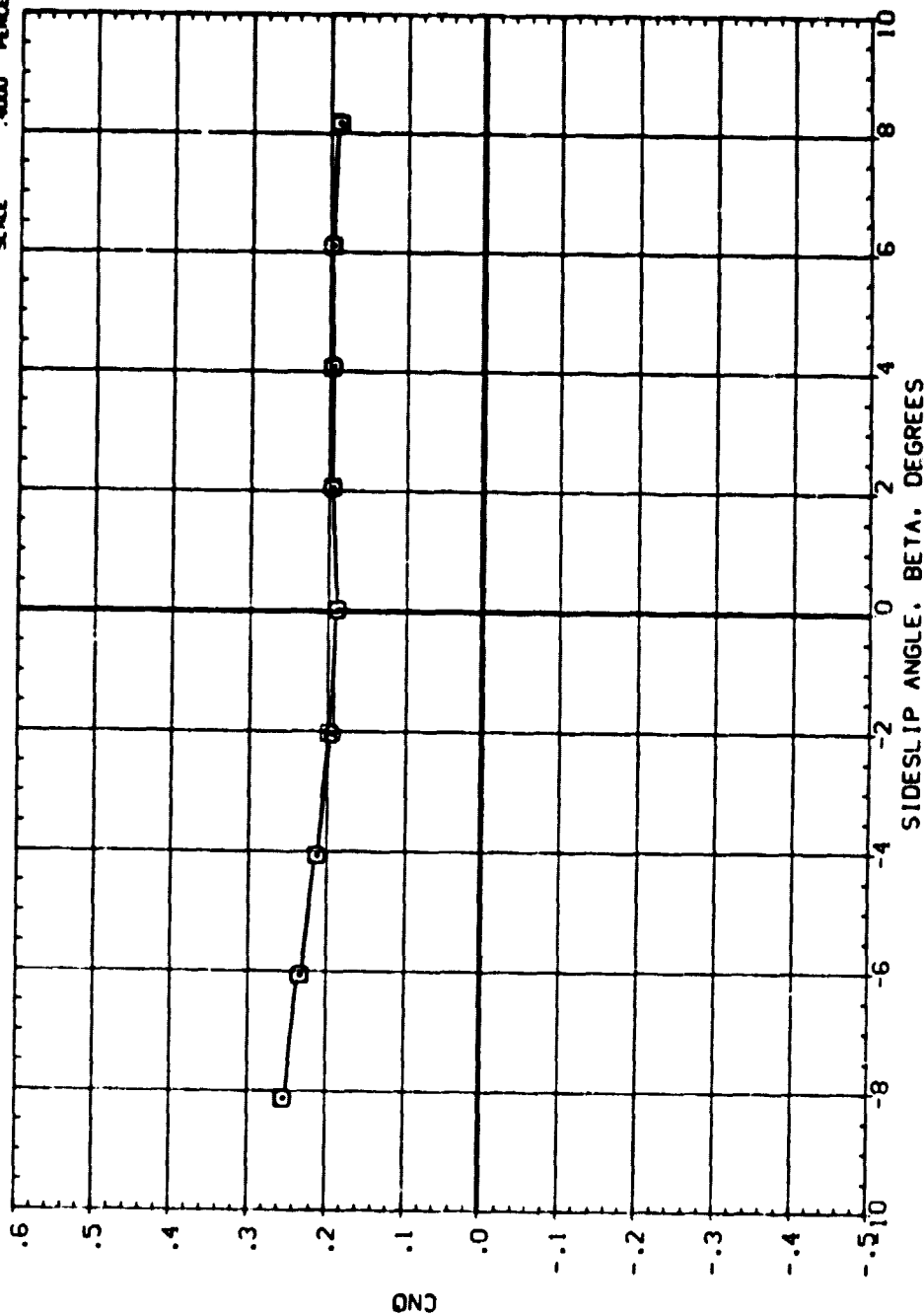


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL: **Q** CONFIGURATION DESCRIPTION:
 (FA2809) FA28. MSFC TWT 656. CONF 10. QNZZEPAPAT1753
 (FA2816) FA28. MSFC TWT 656. CONF 10. QNZZEPAPAT1753 OR

REFERENCE INFORMATION
 SREF 6.1580 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

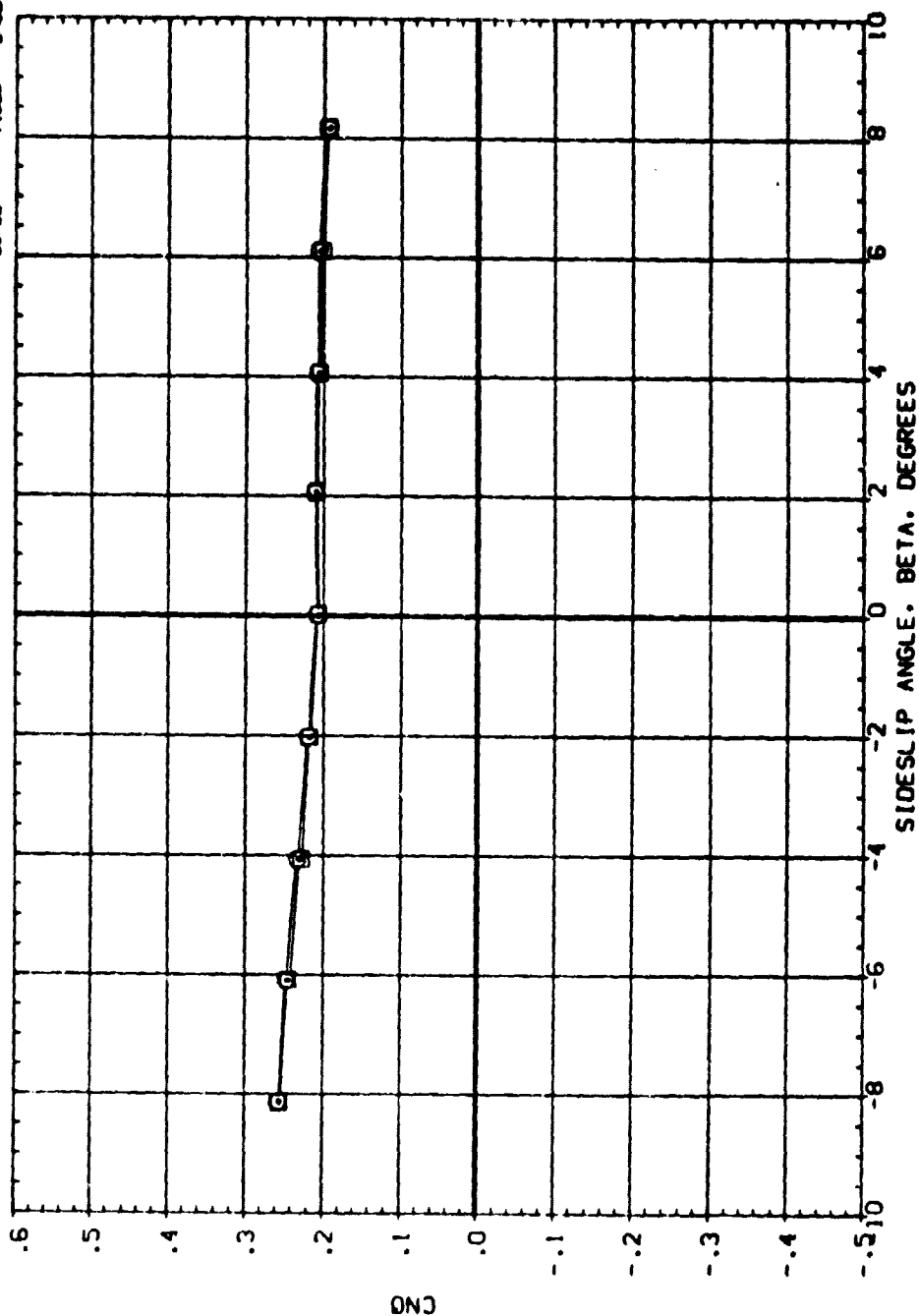


EFFECT OF GRIT ON WINGS

(C)MACH = 1.05

DATA SET SYMBOL: B
 CONFIGURATION DESCRIPTION: FA28. HSFIC TWT 656. CONF 16. CONVEZMPATT133 GR
 (FA2809) FA28. HSFIC TWT 656. CONF 16. CONVEZMPATT133 GR
 (FA2816)

REFERENCE INFORMATION
 SREF: 6.1980 SQ. IN
 LREF: 5.1612 IN.
 BREF: 3.4970 IN.
 WREF: 2.7120 IN.
 HREF: .0000 IN.
 TREF: .0000 IN.
 SCALE: .4000 PERCENT

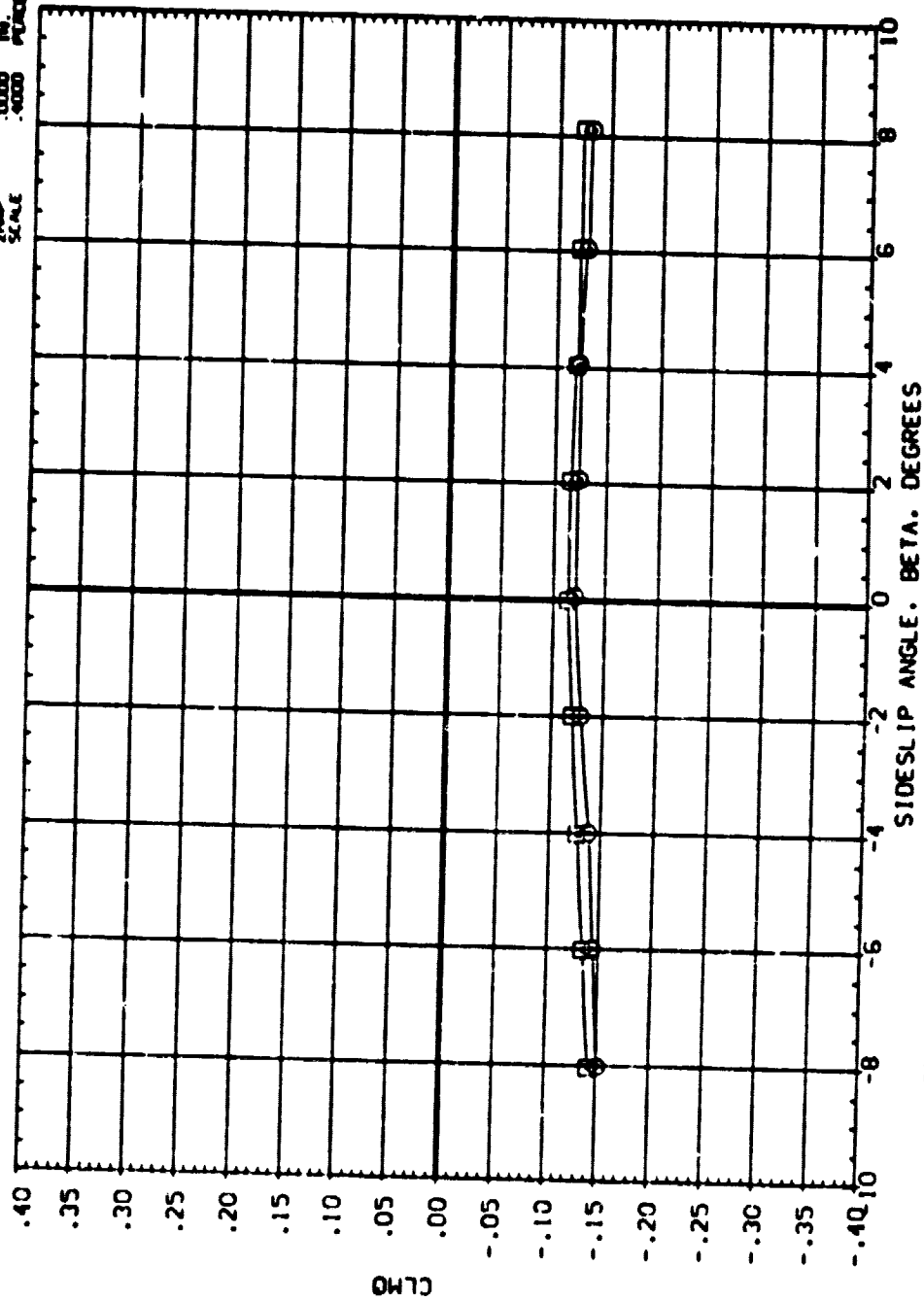


EFFECT OF GRIT ON WINGS

(D)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA202) 8 FA20. MISC INT 65% CONF 16. QN222200011233
 (FA2016) 8 FA20. MISC INT 65% CONF 16. QN222200011233 OR

REFERENCE INFORMATION
 REF 9.1580 IN.
 LIFT 5.1612 IN.
 DRAG 2.7470 IN.
 MOM 2.7120 IN.
 YAW .0000 IN.
 ROLL .0000 IN.
 SCALE .0000 FEET/IN

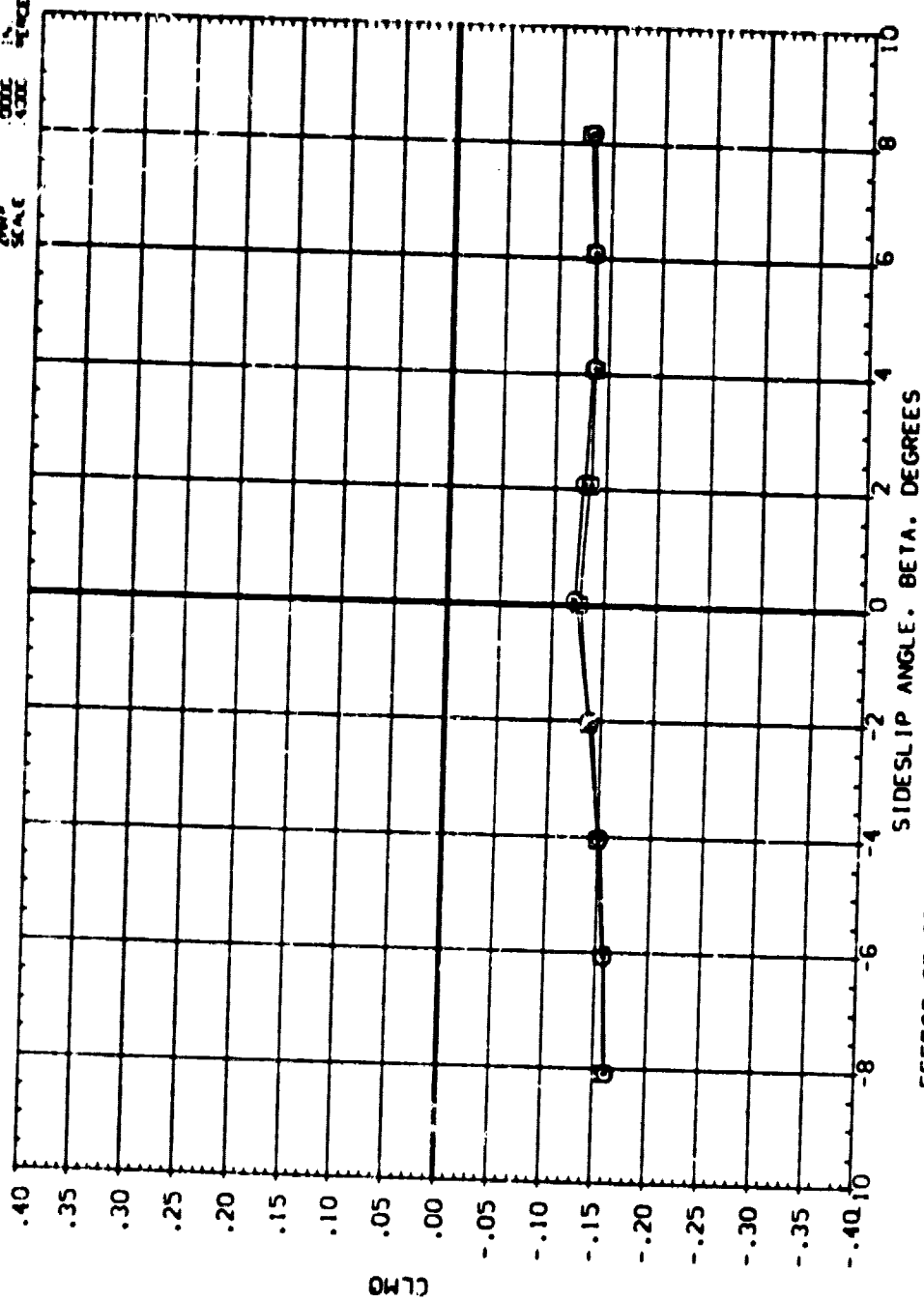


EFFECT OF GRIT ON WINGS

(A)MACH = .60

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2016) B FA20: HSE TV 556. CONFIG. 02VZ200A11253 OR
 (FA2016) B FA20: HSE TV 556. CONFIG. 02VZ200A11253 OR

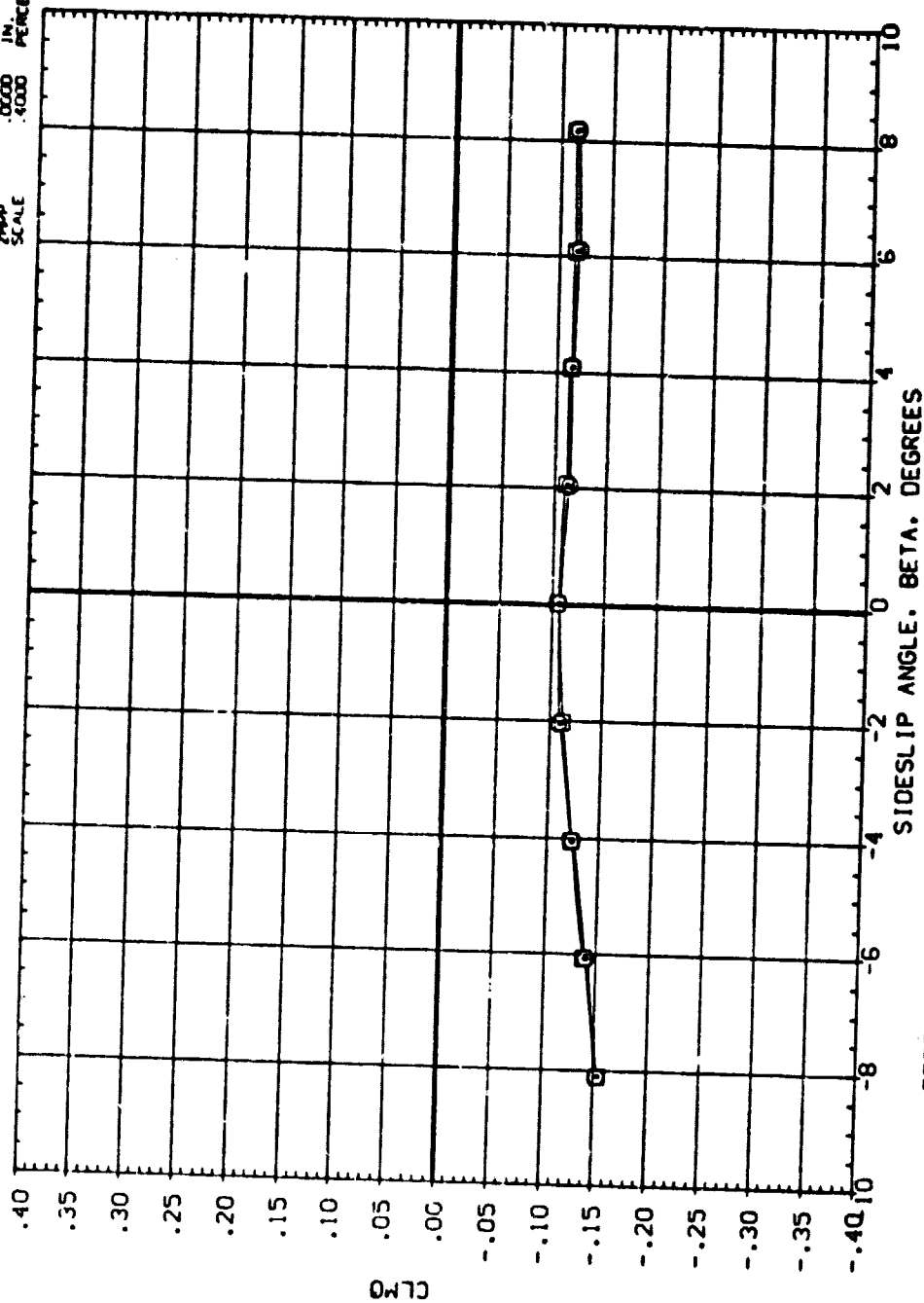
REFERENCE INFORMATION:
 REF 6.120 12 IN
 LIFT 5.1612 IN
 DRAG 3.7473 IN
 MOM 2.712 IN
 YPR 0.000 IN
 ROLL 0.000 IN
 SCALE 1.000 IN
 TOL 0.001 IN



EFFECT OF GRIT ON WINGS
 (B)MACH = .90

DATA SET SYMBOL: B
 (FA2809) FA28: MSC INT 656, CONF 1G, 02NZE2PAPAT1553
 (FA2816) FA28: MSC INT 656, CONF 1G, 02NZE2PAPAT1553 GR

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

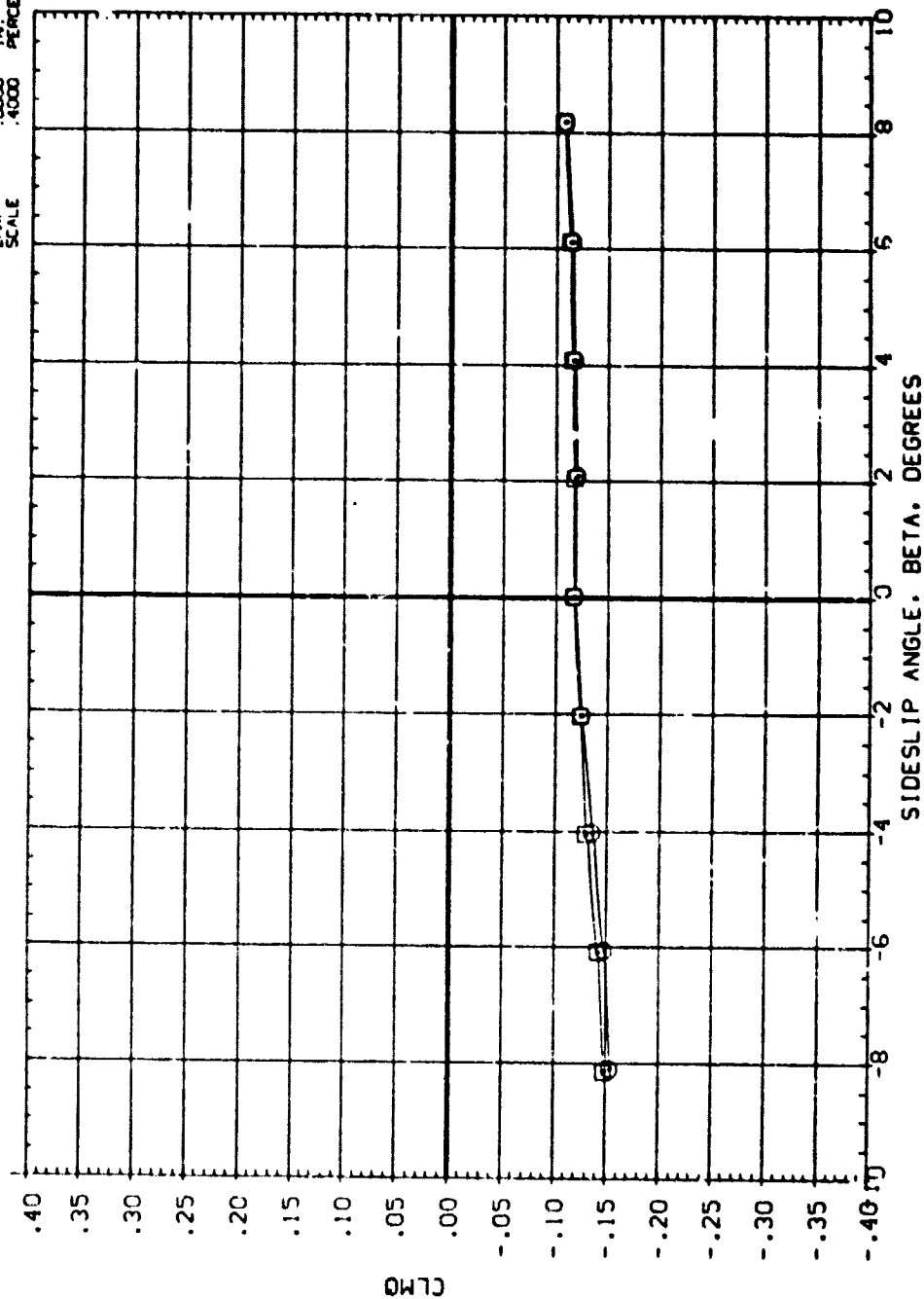


EFFECT OF GRIT ON WINGS

(C)MACH = 1.05

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28, MSC INT 656, CONF IG. 02VZ2P0PAA1153 OR
 FA28, MSC INT 656, CONF IG. 02VZ2P0PAA1153 OR

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

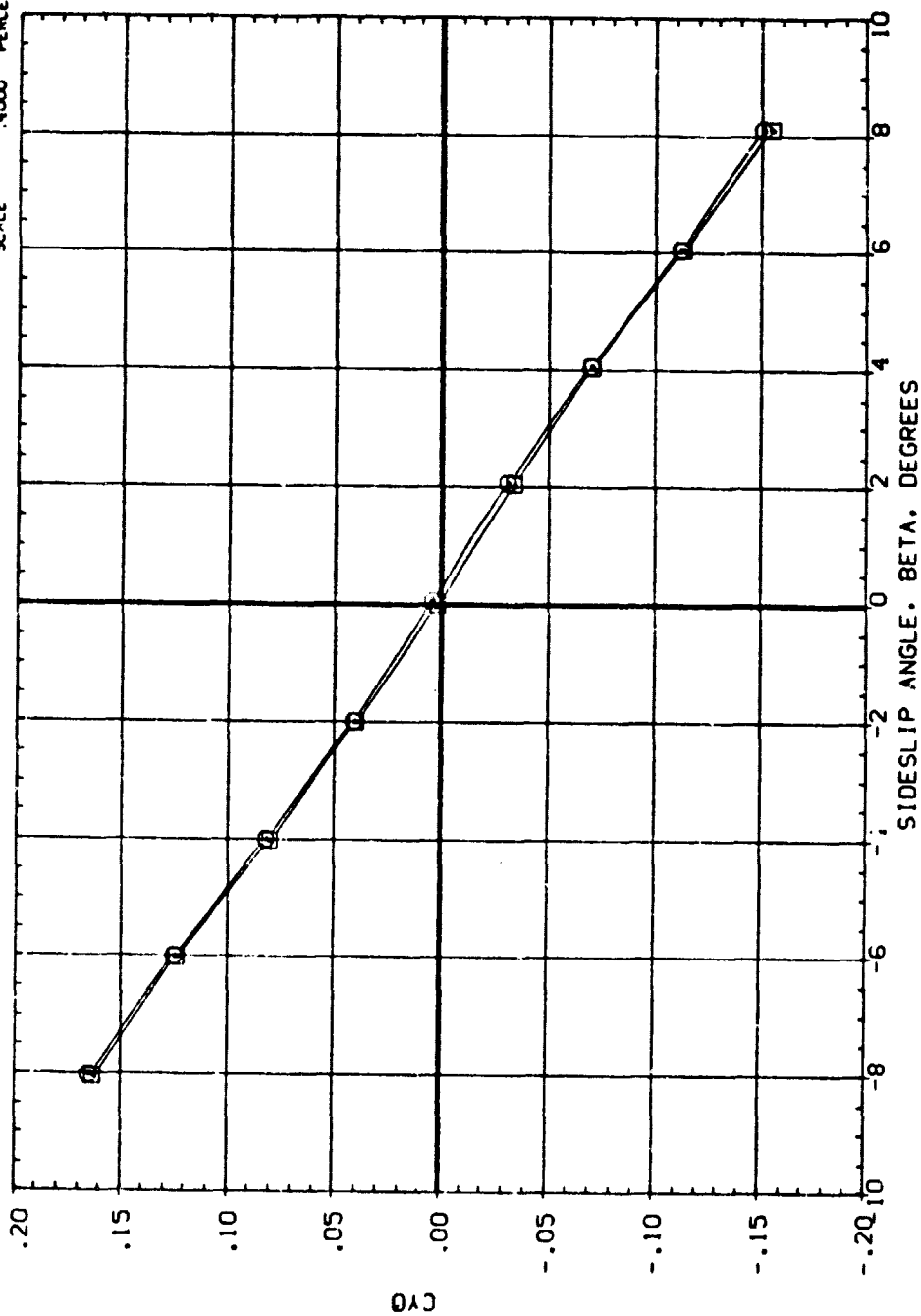


EFFECT OF GRIT ON WINGS

(E)MACH = 1.25

DATA SET SYMBOL: (FA2809) H (FA2816) H
 CONFIGURATION DESCRIPTION: FA28. MSFC TWT 656. CONF.G: 02VZEPAPATT353 OR
 FA28. MSFC TWT 656. CONF.G: 02VZEPAPATT353 OR

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 AMRO 2.7120 IN.
 YARP .0000 IN.
 ZARP .0000 IN.
 SCALE .4000 PERCENT

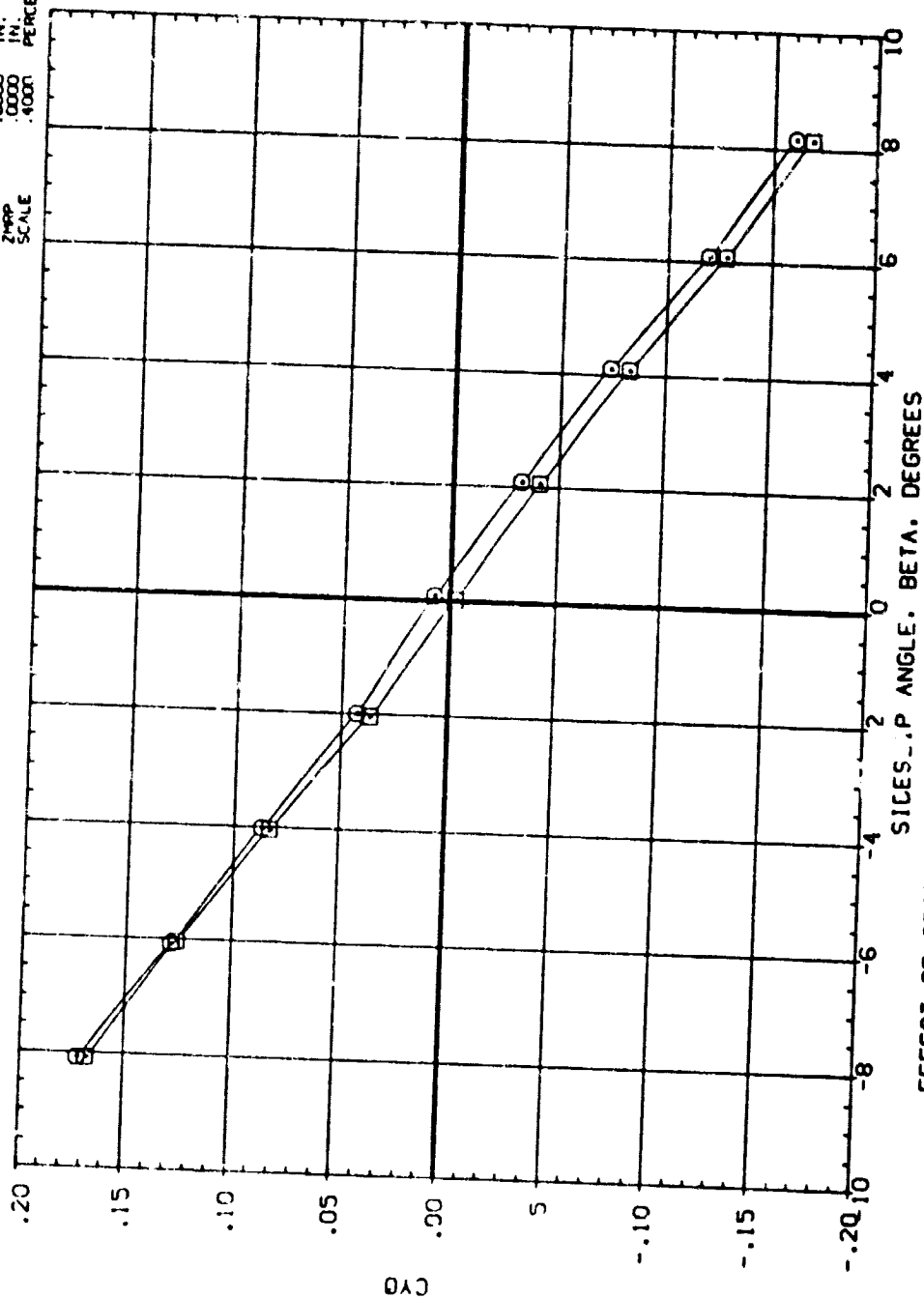


EFFECT OF GRIT ON WINGS

(A)MACH = .60


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) FA28. MSFC TWT 656. CONF IG. 02NZE 2809NATT353
 (FA2816) FA28. MSFC TWT 656. CONF IG. 02NZE 2809NATT353 OR

REFERENCE INFORMATION
 SREF 5.1550 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 VREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0001 PERCENT

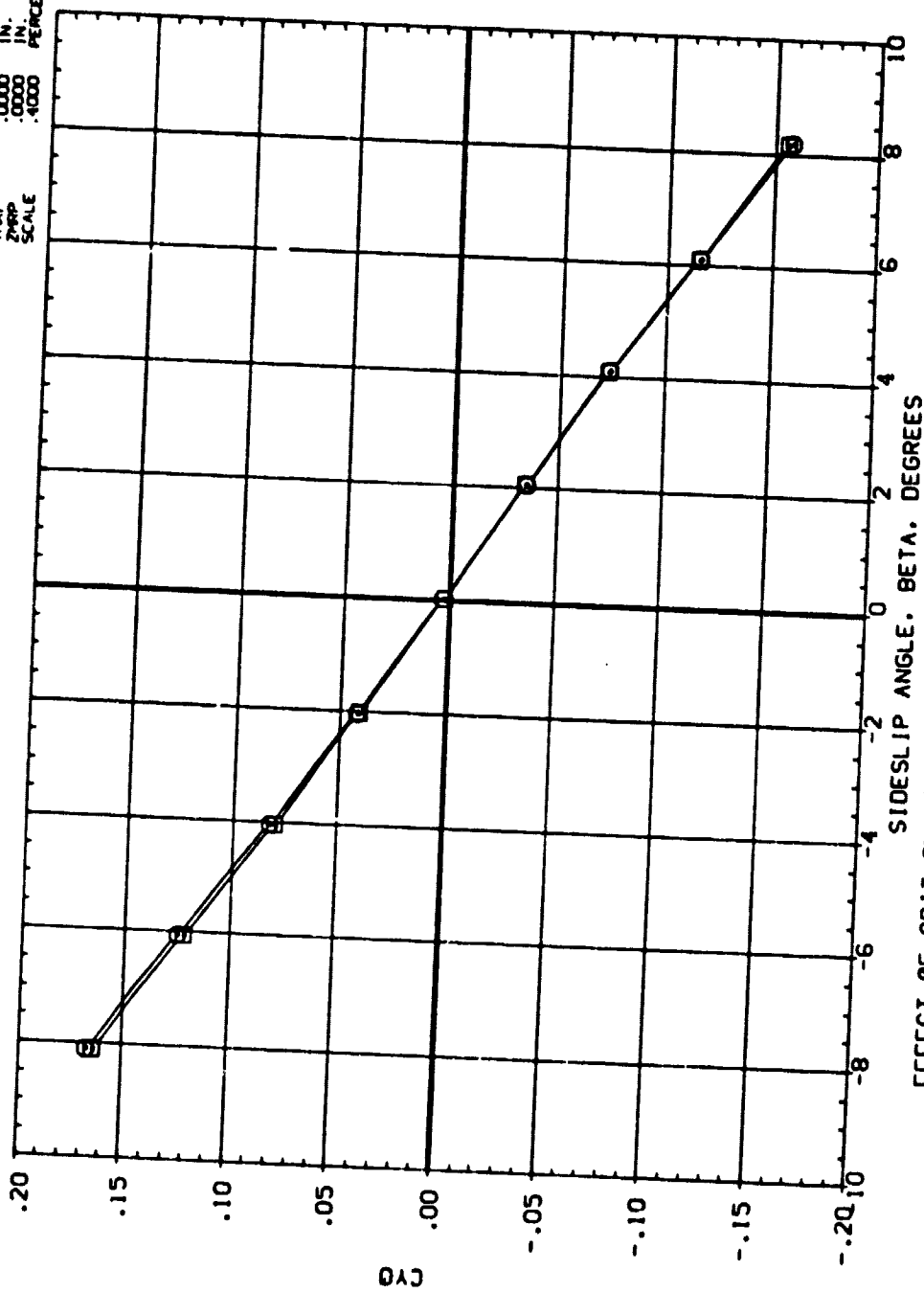


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL: (FA2809) (FA2816)  CONFIGURATION DESCRIPTION: FA28. MSC TWT 636. CONFIG. 02VZ2JNPAA11553 OR FA28. MSC TWT 636. CONFIG. 02VZ2JNPAA11553 OR

REFERENCE INFORMATION
SREF 5.1880 90. IN
LREF 5.1612 IN.
BREF 2.7170 IN.
XREF 2.7120 IN.
YREF .0000 IN.
ZREF .0000 IN.
SCALE .4000 PERCENT

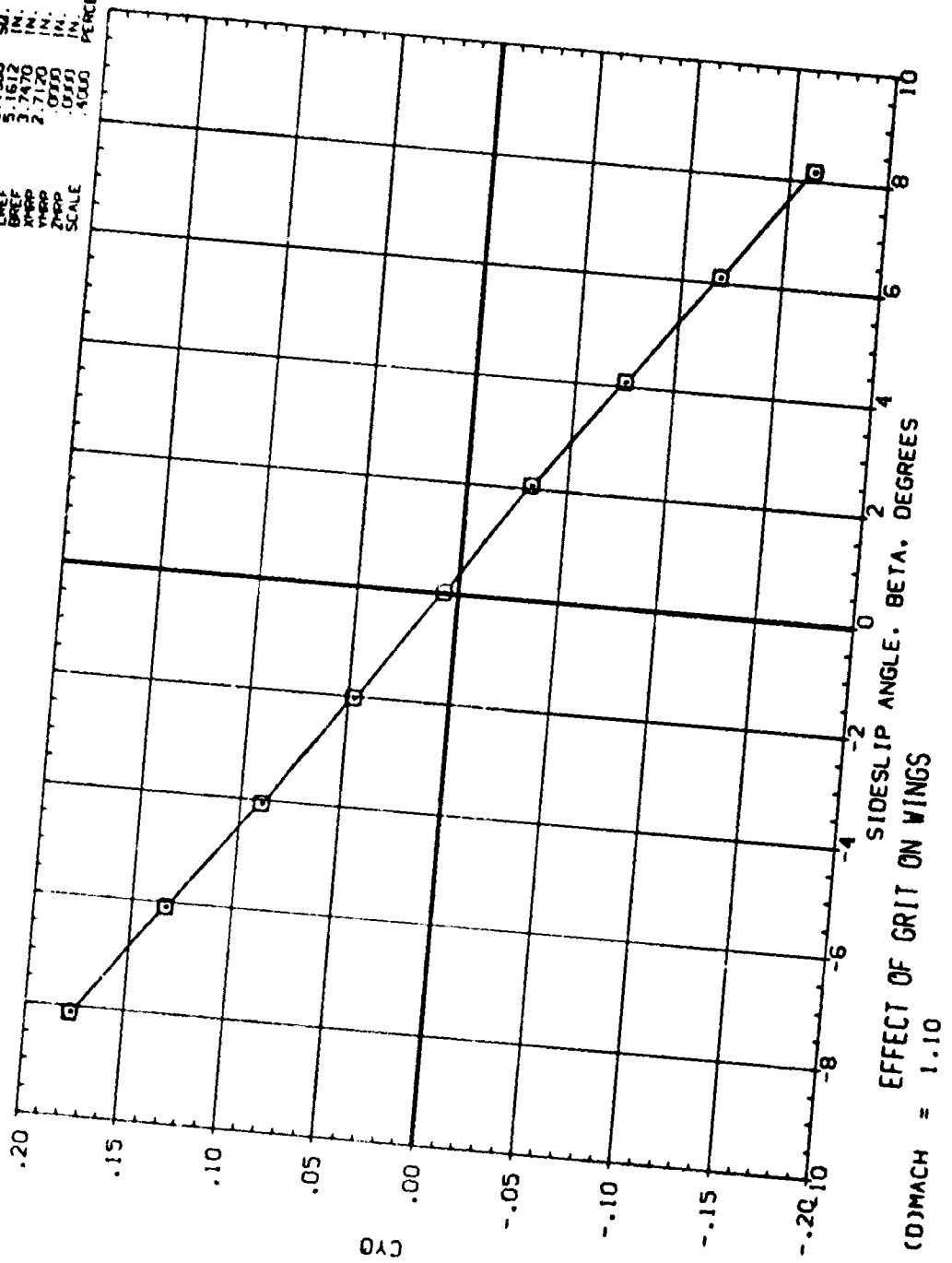


EFFECT OF GRIT ON WINGS
(C)MACH = 1.05

DATA SET SYMBOL: □
 (FA2809) □
 (FA2816) □

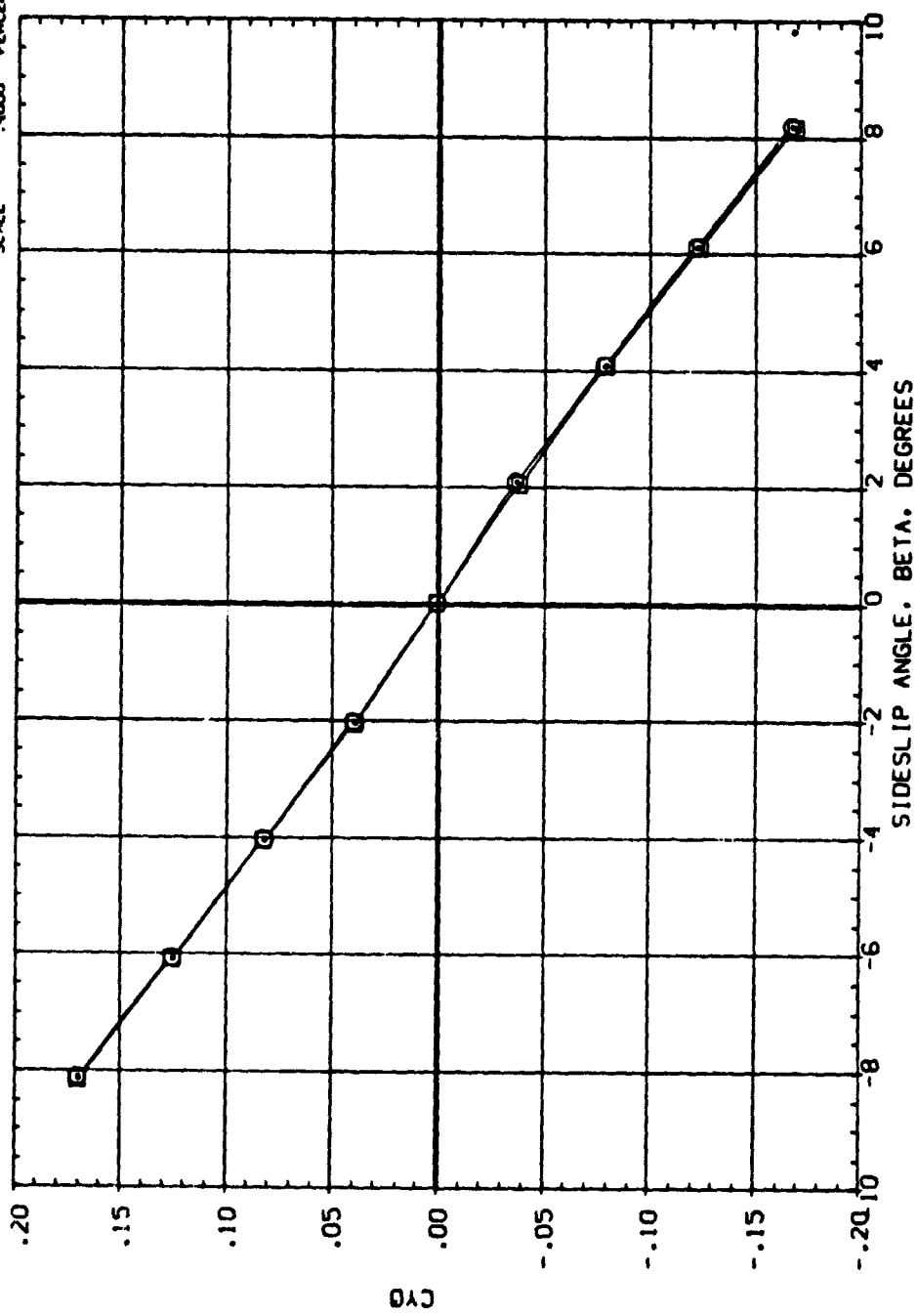
CONFIGURATION DESCRIPTION
 FA28, MSC 1W 656, CONF 1G, QWZE20PAATT353
 FA28, MSC 1W 656, CONF 1G, QWZE20PAATT353 OR

REFERENCE INFORMATION
 SREF 5.1880 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7170 IN.
 YREF 2.7170 IN.
 ZREF 0.0000 IN.
 SCALE .0000 PERCENT



DATA SET SYMBOL: B CONFIGURATION DESCRIPTION: FA20: MSFC TW: 656: CON: 15: 02VZ2P0PATT353 OR
 (FA2016) FA20: MSFC TW: 656: CON: 15: 02VZ2P0PATT353 OR

REFERENCE INFORMATION
 SREF 6.1589 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 XREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

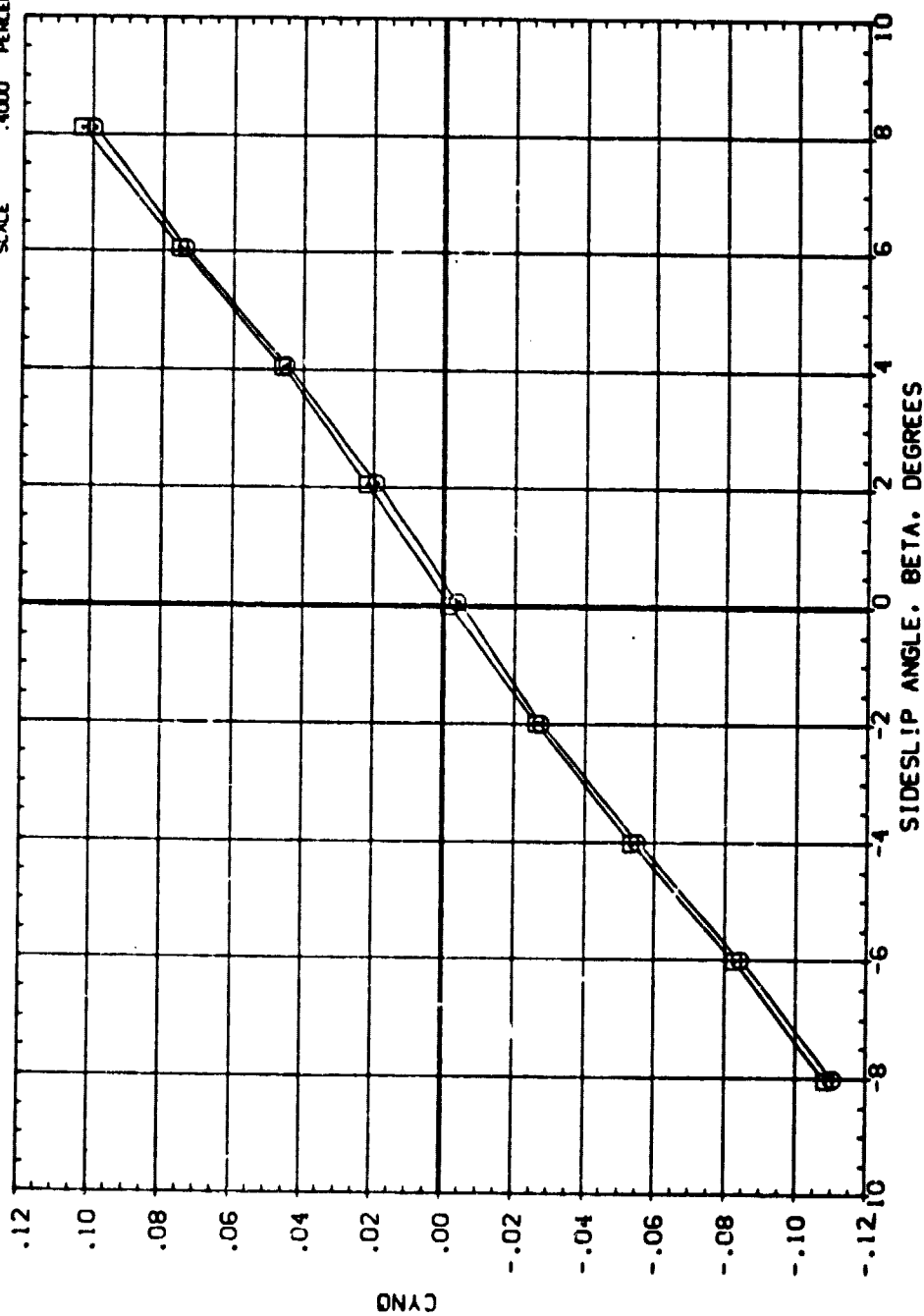


EFFECT OF GRIT ON WINGS

(E)MACH = 1.25

DATA SET SYMBOL: ☐ FA28. MSC INT 656. CONFIG. Q2VZ2PAA11353 OR
 (FA2816) ☐ FA28. MSC INT 656. CONFIG. Q2VZ2PAA11353 OR

REFERENCE INFORMATION
 SREF 6.1880 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.3470 IN.
 XHOP 2.7120 IN.
 YHOP .0000 IN.
 ZHOP .0000 IN.
 SCALE .4000 PERCENT

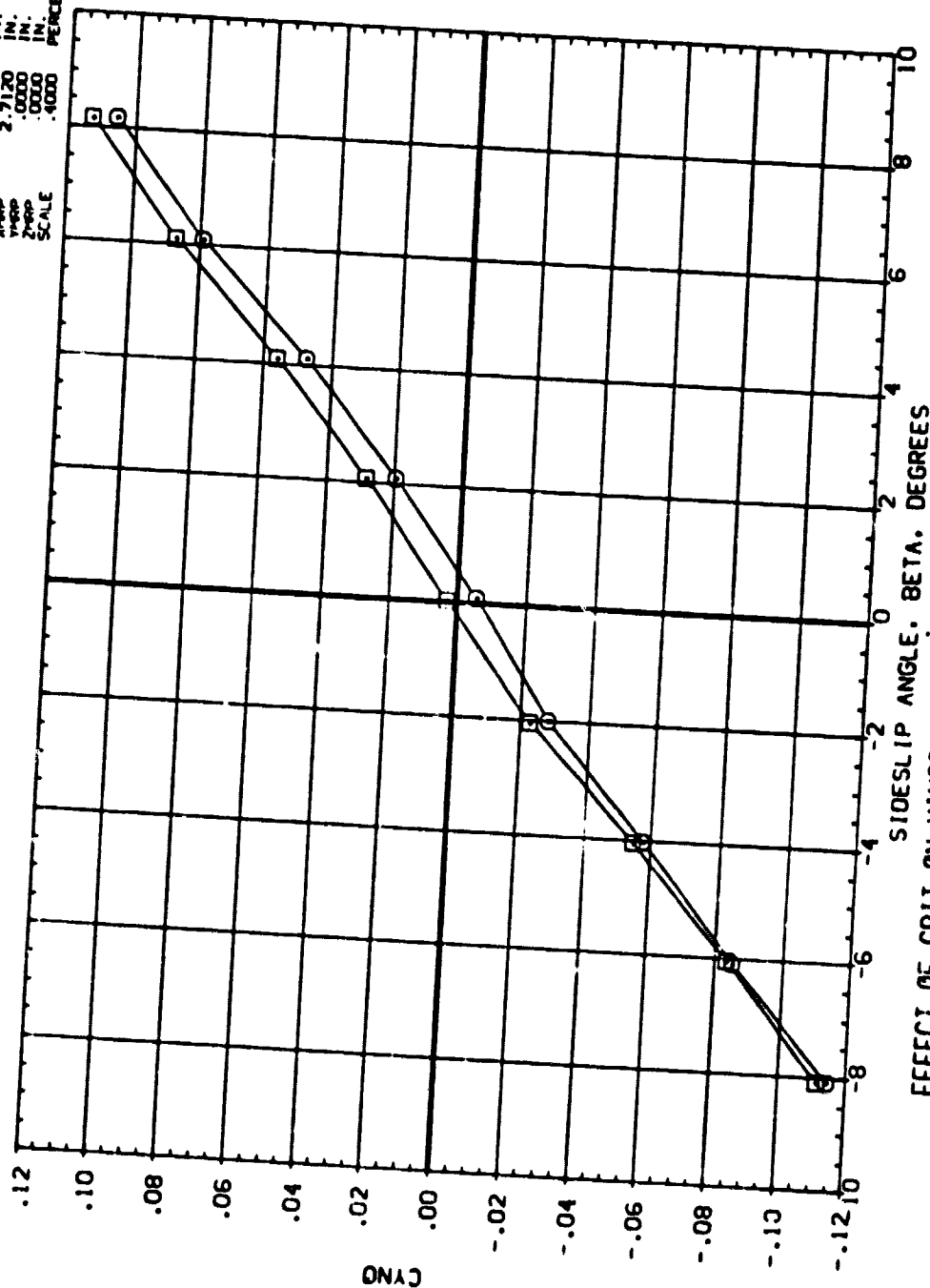


EFFECT OF GRIT ON WINGS

(A)MACH = .60

DATA SET SYMBOL: (FA2809) 8
 CONFIGURATION DESCRIPTION: FA28: HSC TOT 656; CONF IG: 00VZ2PMAATT253
 (FA2816) 8 FA28: HSC TOT 656; CONF IG: 00VZ2PMAATT353 GR

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 3.1612 IN.
 BREF 2.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

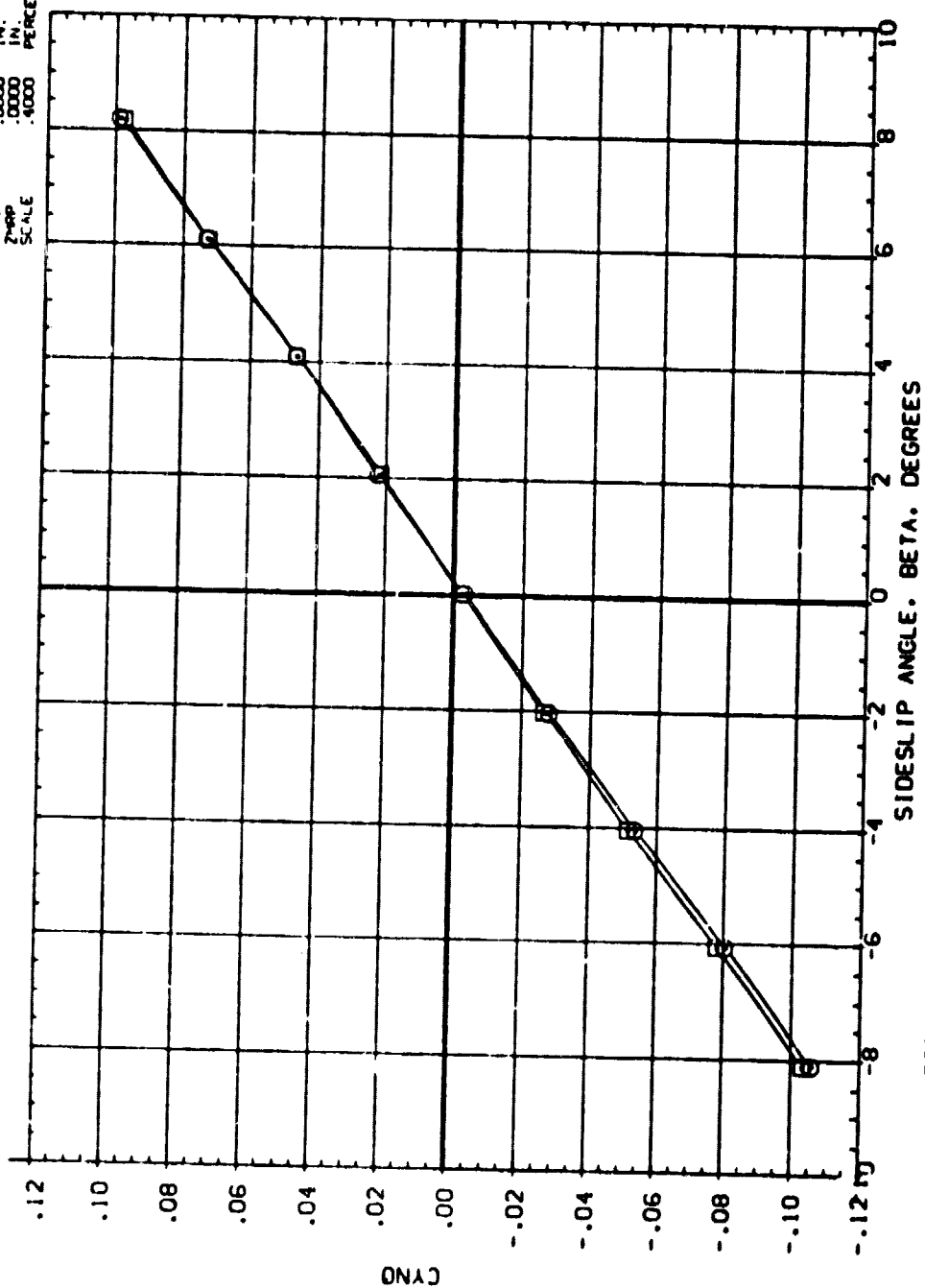


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL: (FA2809) (FA2816)  CONFIGURATION DESCRIPTION: FA28. MSFC TWT 555. CONF 16. FA28. MSFC TWT 555. CONF 16. SIDEZEMPHAT153 SIDEZEMPHAT153 OR

REFERENCE INFORMATION
SREF 5.1980 IN.
LREF 5.1512 IN.
BREF 3.7470 IN.
XPROP 2.7120 IN.
YPROP .0000 IN.
ZPROP .0000 IN.
SCALE .4000 PERCENT

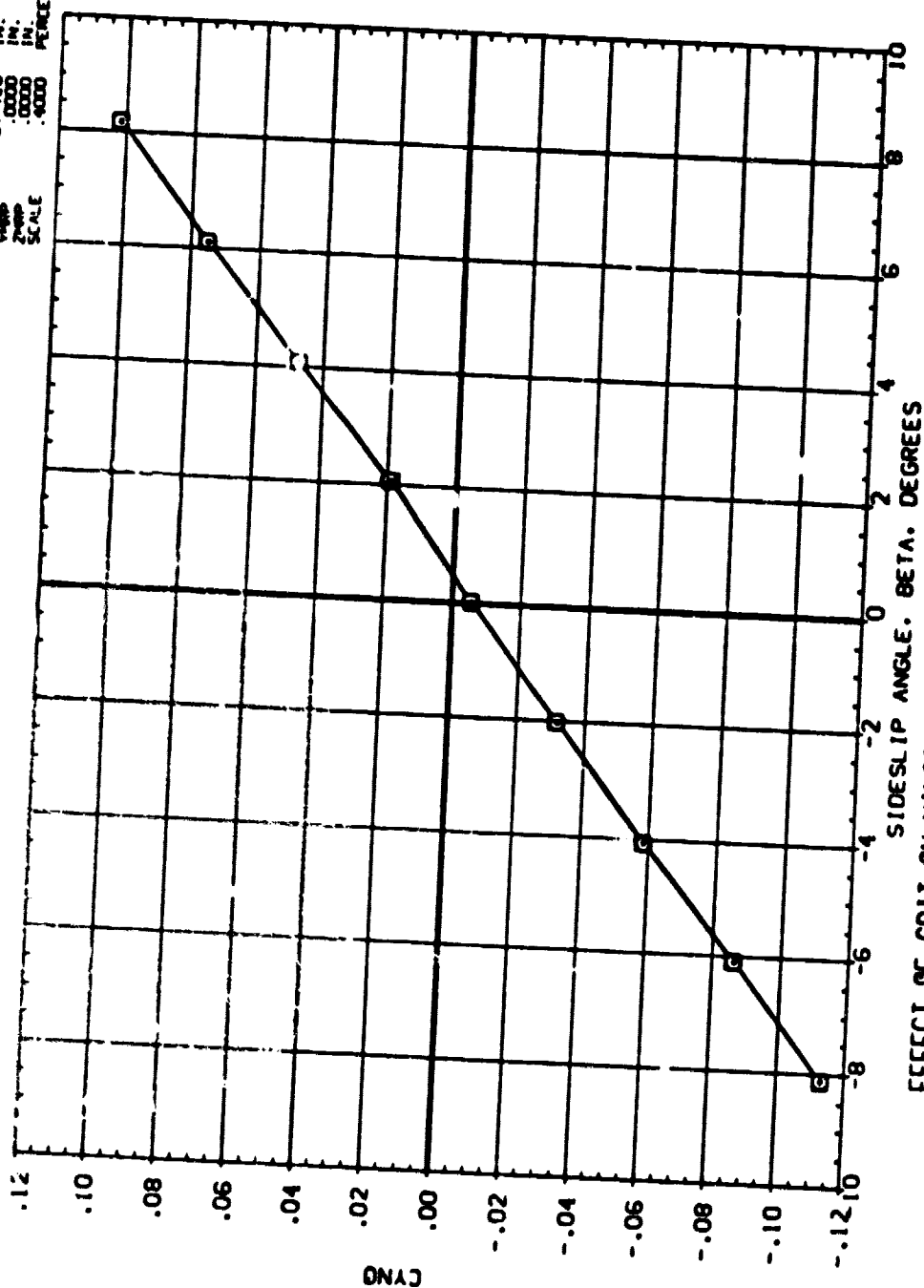


EFFECT OF SRIT ON WINGS

(C)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(EASTERN) C	

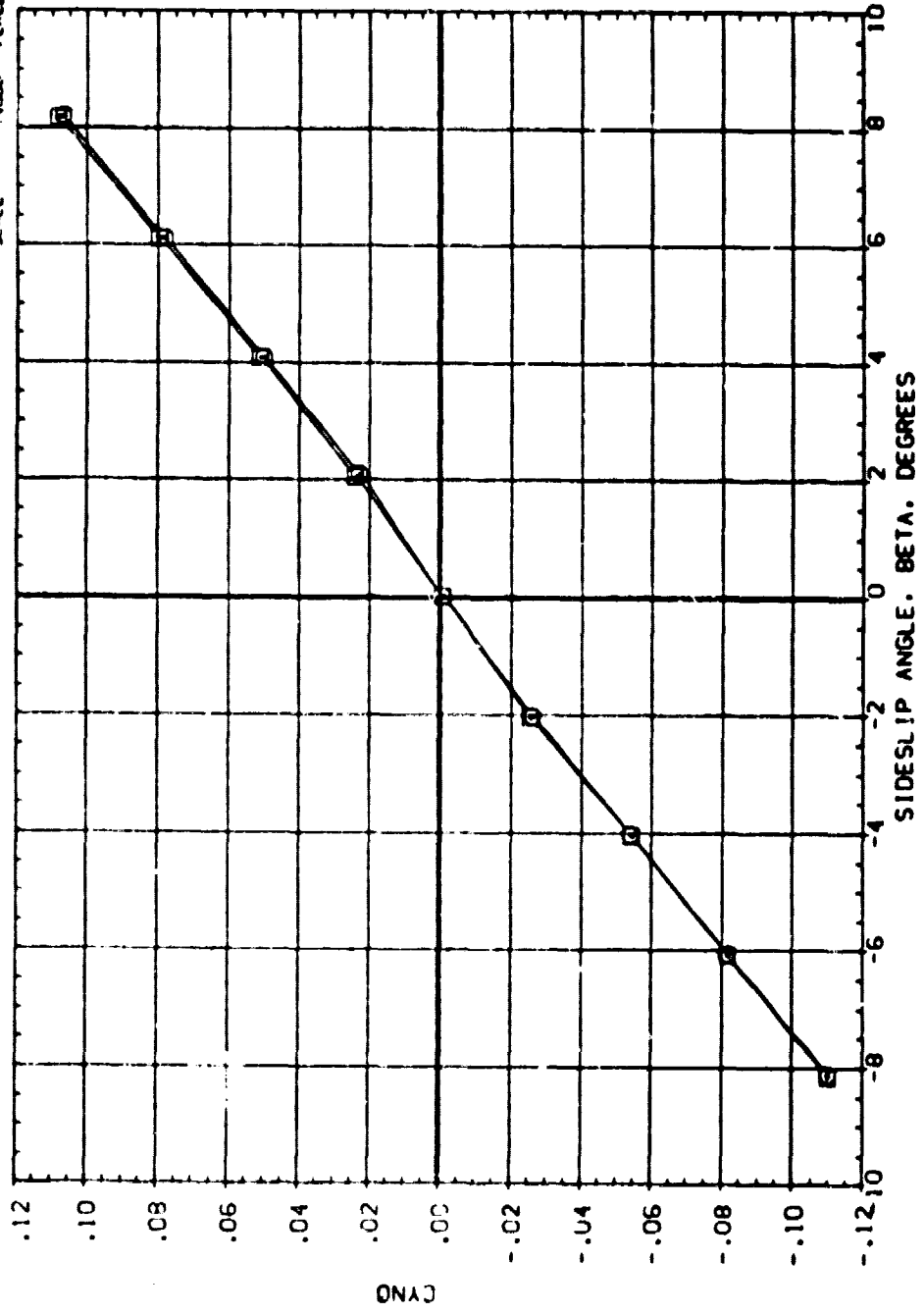
REFERENCE INFORMATION	
SHEET	6.1580 IN.
LINE	5.1512 IN.
DATE	2.2470 IN.
TIME	2.7120 IN.
TEMP	.0000 IN.
WIND	.0000 IN.
SCALE	.4000 PERCENT



(D)MACH = 1.10

DATA SET SYMBOL: **8** CONFIGURATION DESCRIPTION:
 (FA202) F2B: M5C TVT 556: CONF 1G. CONF 2M-PAAT133
 (FA2016) F2B: M5C TVT 556: CONF 1G. CONF 2M-PAAT133 ON

REFERENCE INFORMATION:
 SWEET 6.1580 SQ. IN.
 LACE 5.1612 IN.
 BRACE 3.7470 IN.
 ANGLE 2.7120 IN.
 WING .0000 IN.
 TAPER .0000 IN.
 SCALE 4000 PERCENT

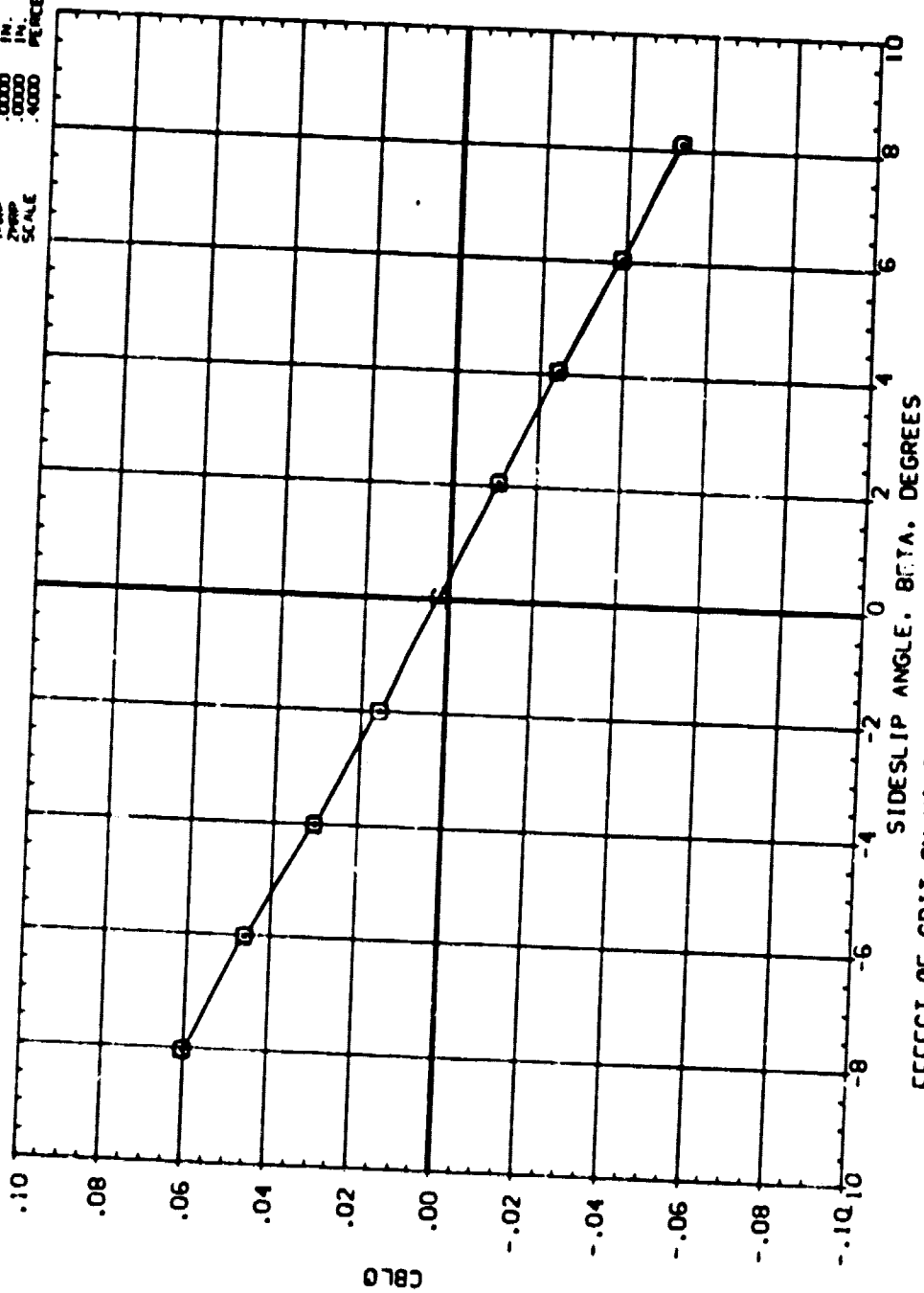


EFFECT OF GRIT ON WINGS

(E)MACH = 1.25

FA70. F5C 147 656. C06 16. 02VZEM0A117353 08
FA70. F5C 147 656. C06 16. 02VZEM0A117353 08

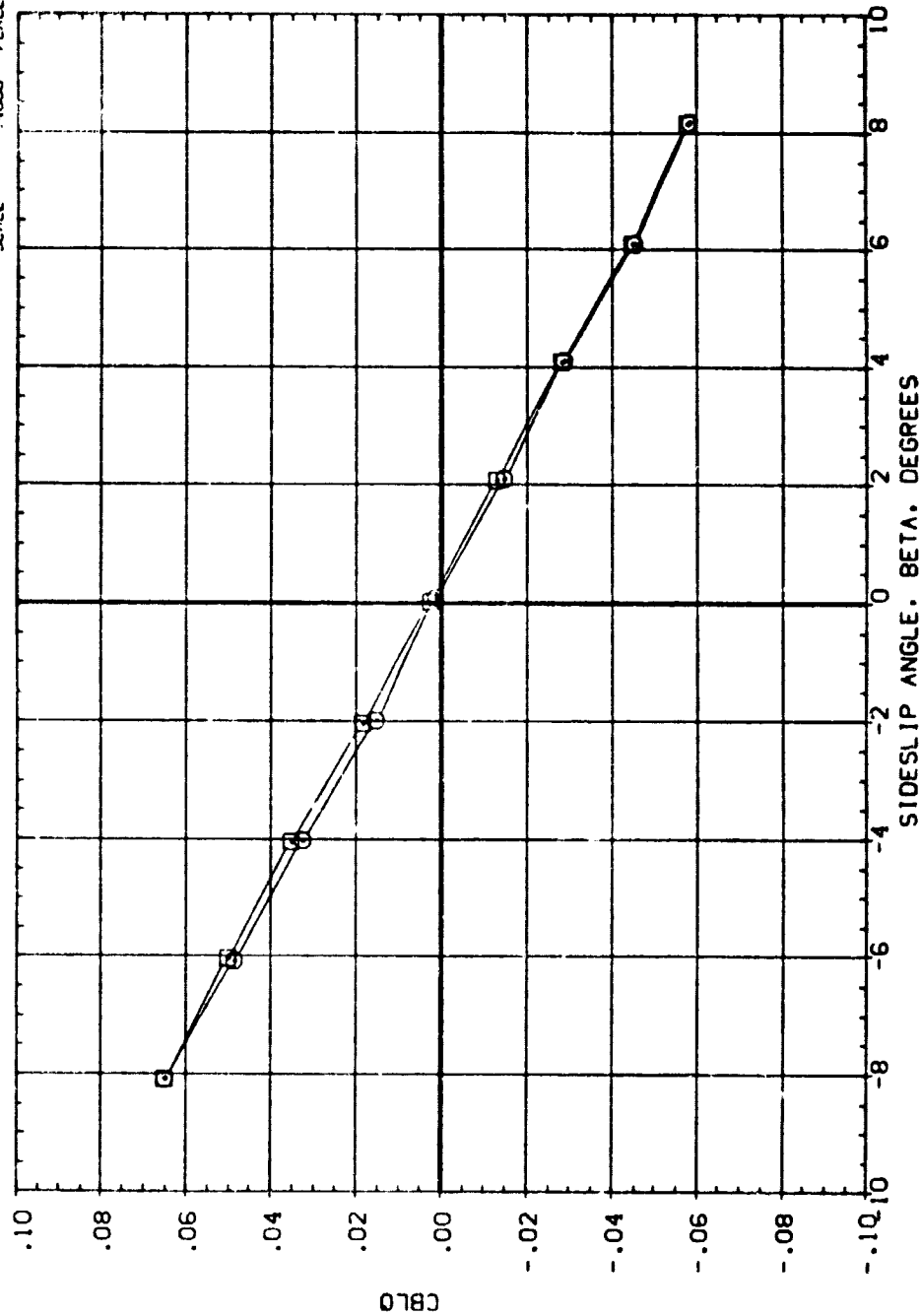
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CONFIDENTIAL NO. 17 NO. 15 1957

DATA SET SYMBOL: (FA2808) (FA2816) **B** CONFIGURATION DESCRIPTION: FA28: MSFC TWT 656: CONF 10: 02VZE2MPAAT1253 FA28: MSFC TWT 656: CONF 10: 02VZE2MPAAT1353 GR

REFERENCE INFORMATION:
 SREF: 6.1800 SQ. IN.
 LREF: 3.1612 IN.
 BREF: 2.7170 IN.
 WREF: .0000 IN.
 WARP: .0000 IN.
 ZWAP: .0000 IN.
 SCALE: 4000 PERCENT



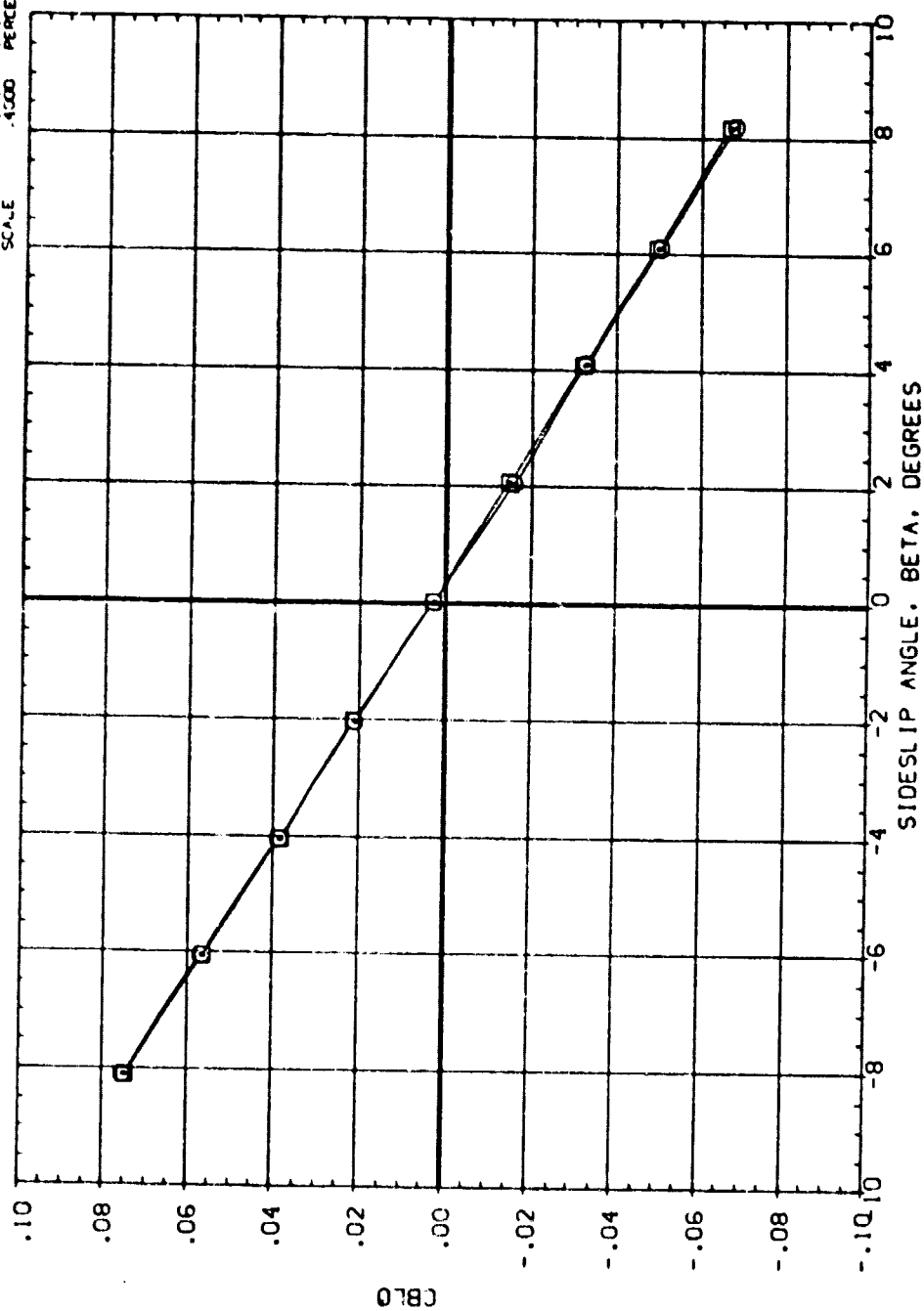
EFFECT OF GRIT ON WINGS

(B)MACH = .90

[illegible]

FA28. MSFC TWT 656. CONF:G. 02VZEP0PAA1TJ53 GR
FA28. MSFC TWT 656. CONF:G. 02VZEP0PAA1TJ53 GR

	REFERENCE INFORMATION
SREF	6.1980 IN.
LRF	5.1612 IN.
BREF	3.7470 IN.
YREF	2.7120 IN.
VR0	.0000 IN.
VR90	.0000 IN.
SCALE	.4000 PERCENT

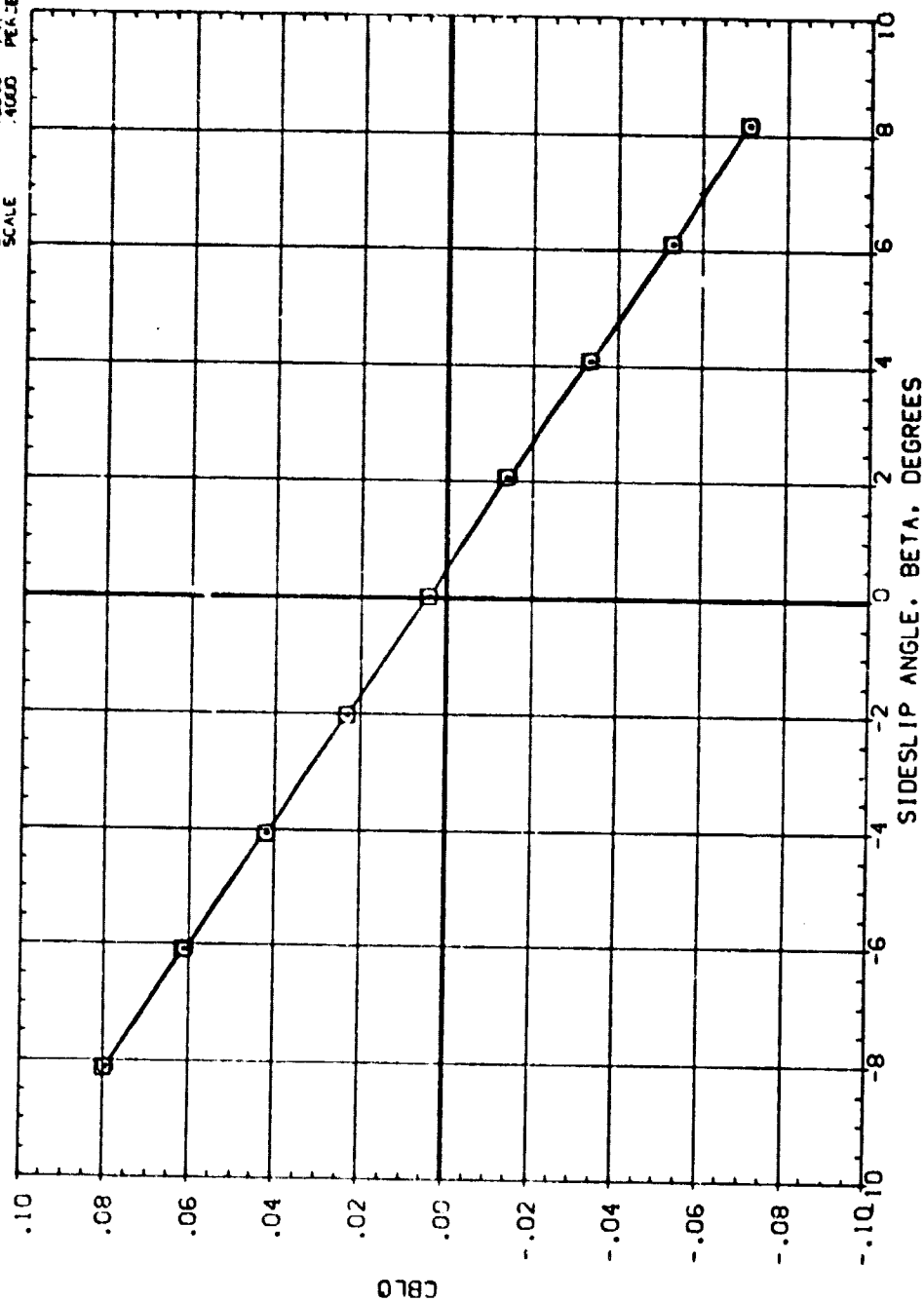


EFFECT OF GRIT ON WINGS

$$C(MACH) = 1.05$$

DATA SET SYMBOL: **Q** CONFIGURATION DESCRIPTION:
 (FA2809) FA28. MSC TWT 656. CONFIG. 02VZ2PAPAT1353
 (FA2816) FA28. MSC TWT 656. CONFIG. 02VZ2PAPAT1353 OR

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 2.7470 IN.
 XREF 2.7120 IN.
 YREF 0.0000 IN.
 ZREF 0.0000 IN.
 SCALE 4000 PEA-EM

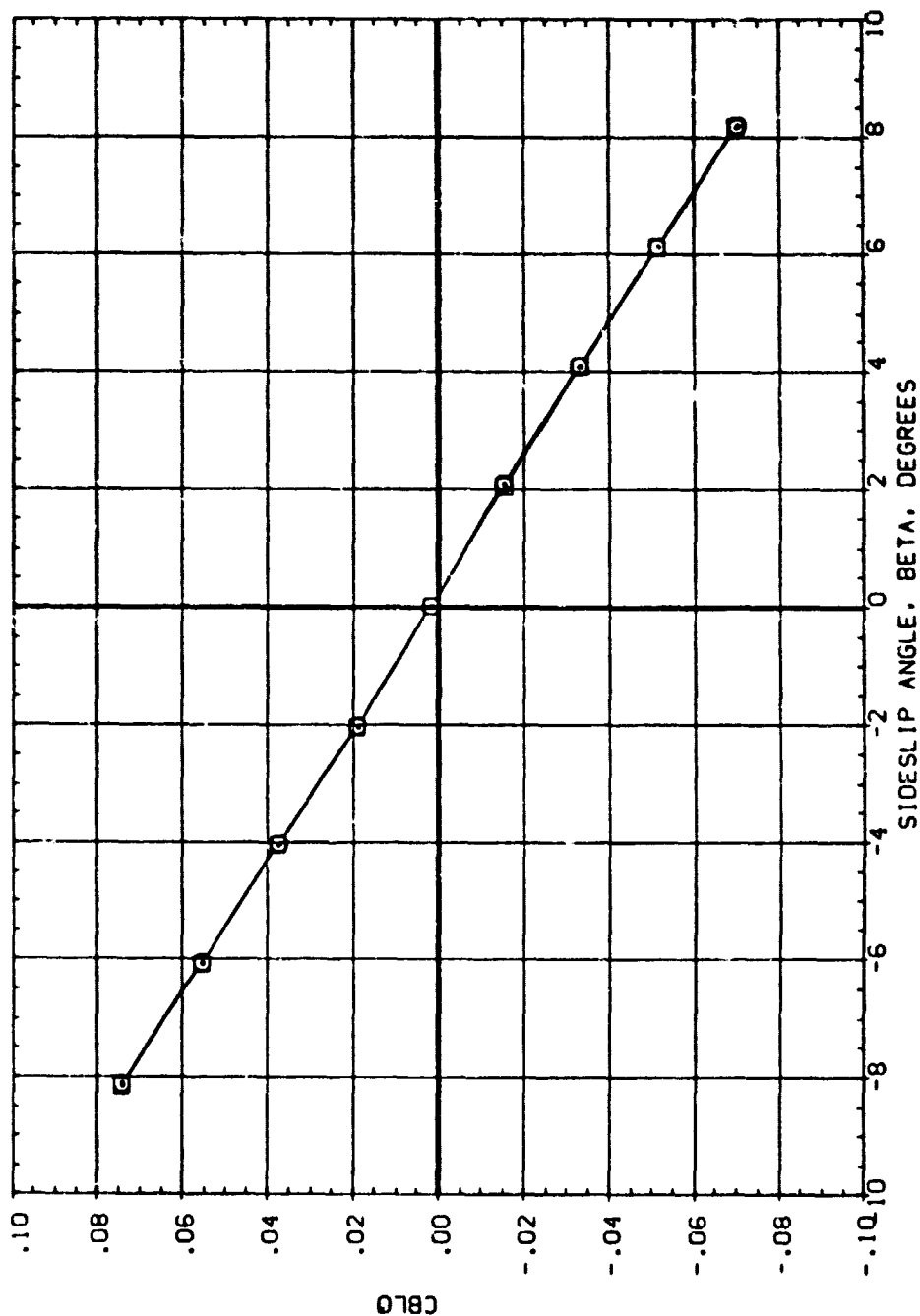


EFFECT OF GRIT ON WINGS

(D)MACH = 1.10

DATA SET SYMBOL: **8** CONFIGURATION DESCRIPTION:
 (FA2809) FA28, MSC TWT 556, CONF IG. 02VZ20PATT1753 GP
 (FA2816) FA28, MSC TWT 656, CONF IG. 02VZ20PATT1753 GP

REFERENCE INFORMATION
 SREF 6.1800 SQ. IN
 DREF 5.1612 IN.
 DREF 2.7470 IN.
 VREF 2.7120 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

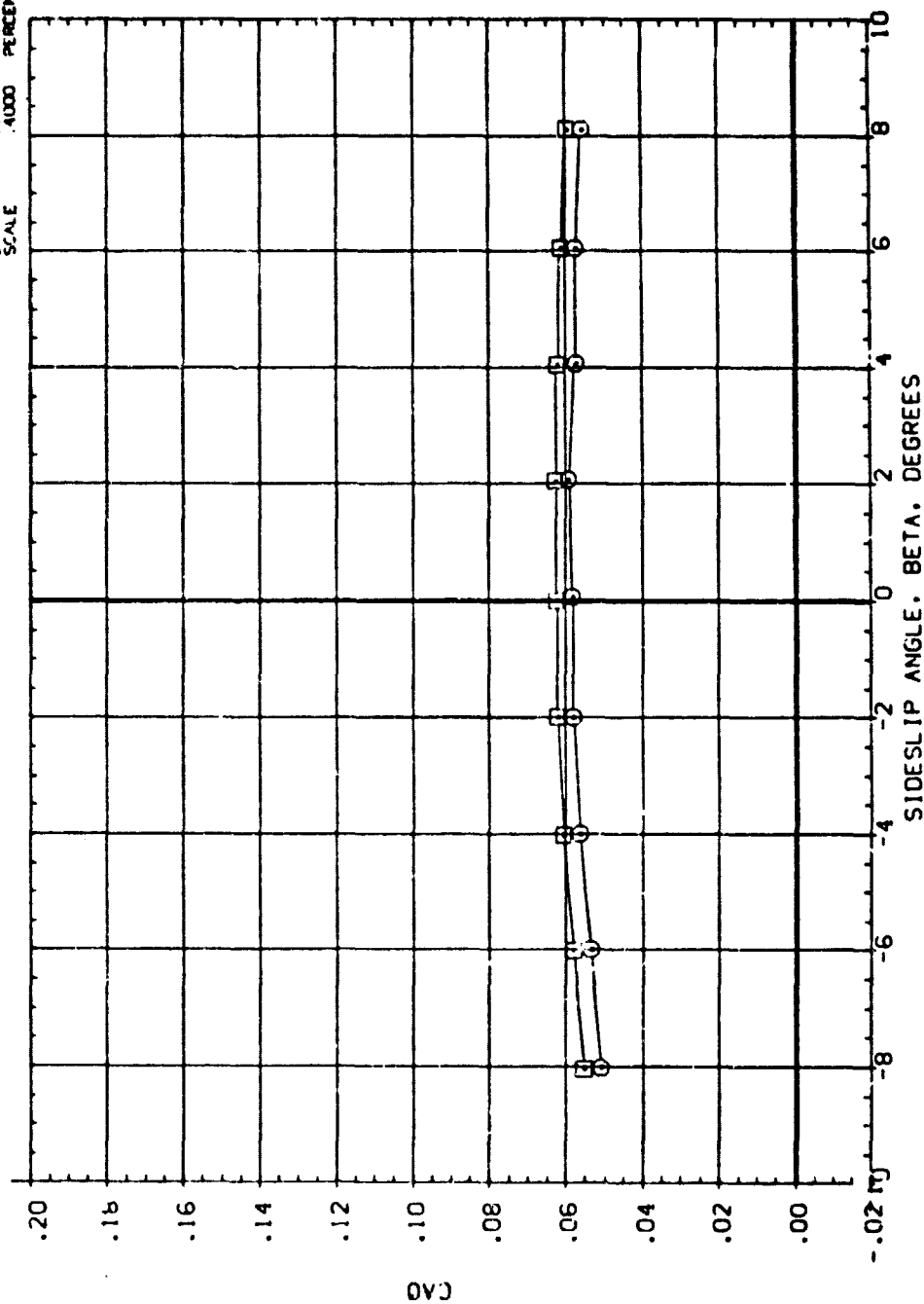


EFFECT OF GRIT ON WINGS

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) FA28: MSFC TWT 656: CONF 16: 00VZ2PMPAATT353
 (FA2816) FA28: MSFC TWT 656: CONF 16: 00VZ2PMPAATT353 GR

REFERENCE INFORMATION
 SREF 6.1980 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 VREF 2.7120 IN
 WREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

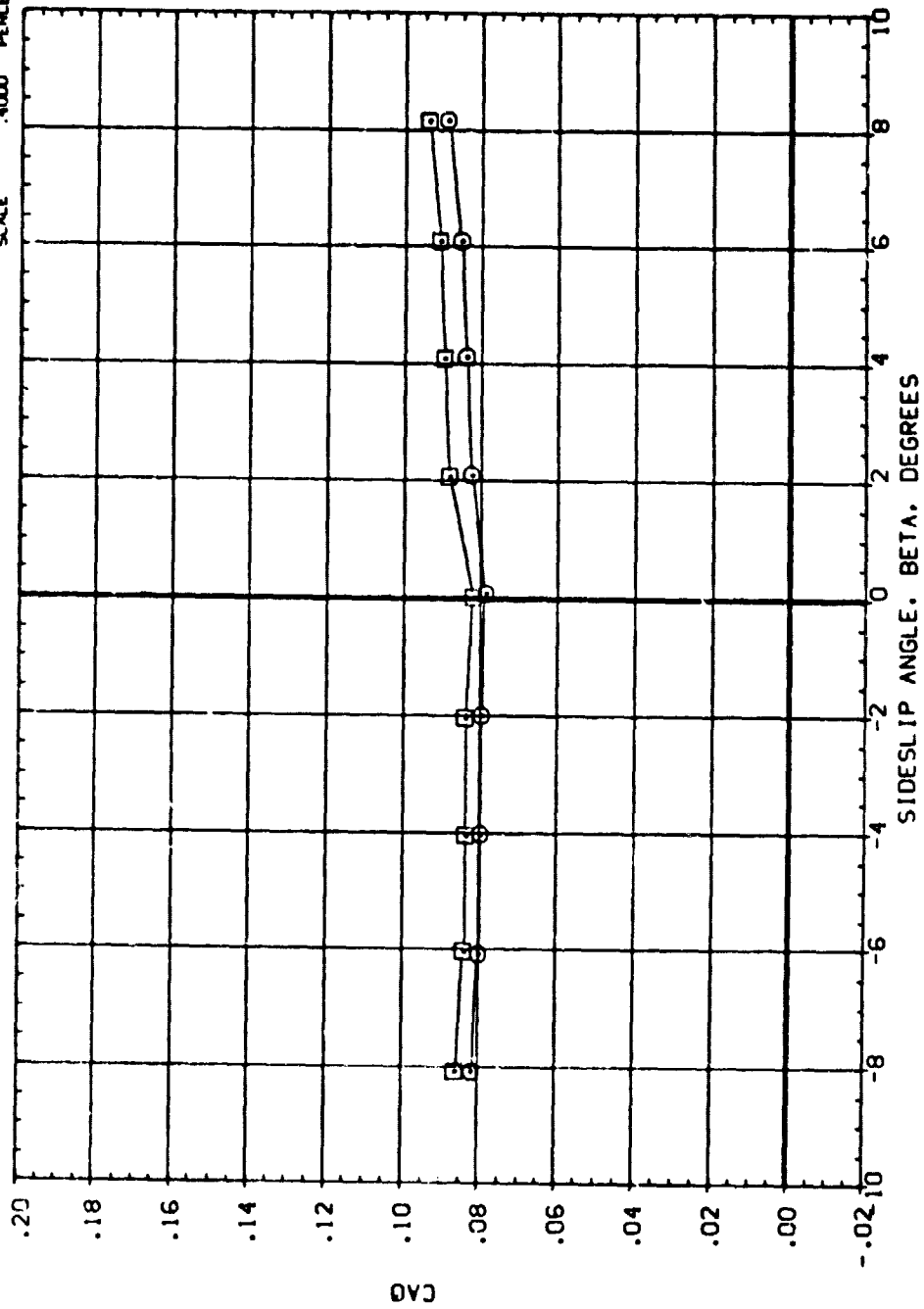


EFFECT OF GRIT ON WINGS

(A)MACH = .60



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) FA28. MSC TWT 656. CONF IG. 02NZE20PAA1TJ53
 (FA2816) FA28. MSC TWT 656. CONF IG. 02NZE20PAA1TJ53 GR

REFERENCE INFORMATION
 SREF 6.1880 SQ. IN.
 LREF 5.1612 IN.
 BREF 2.7970 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

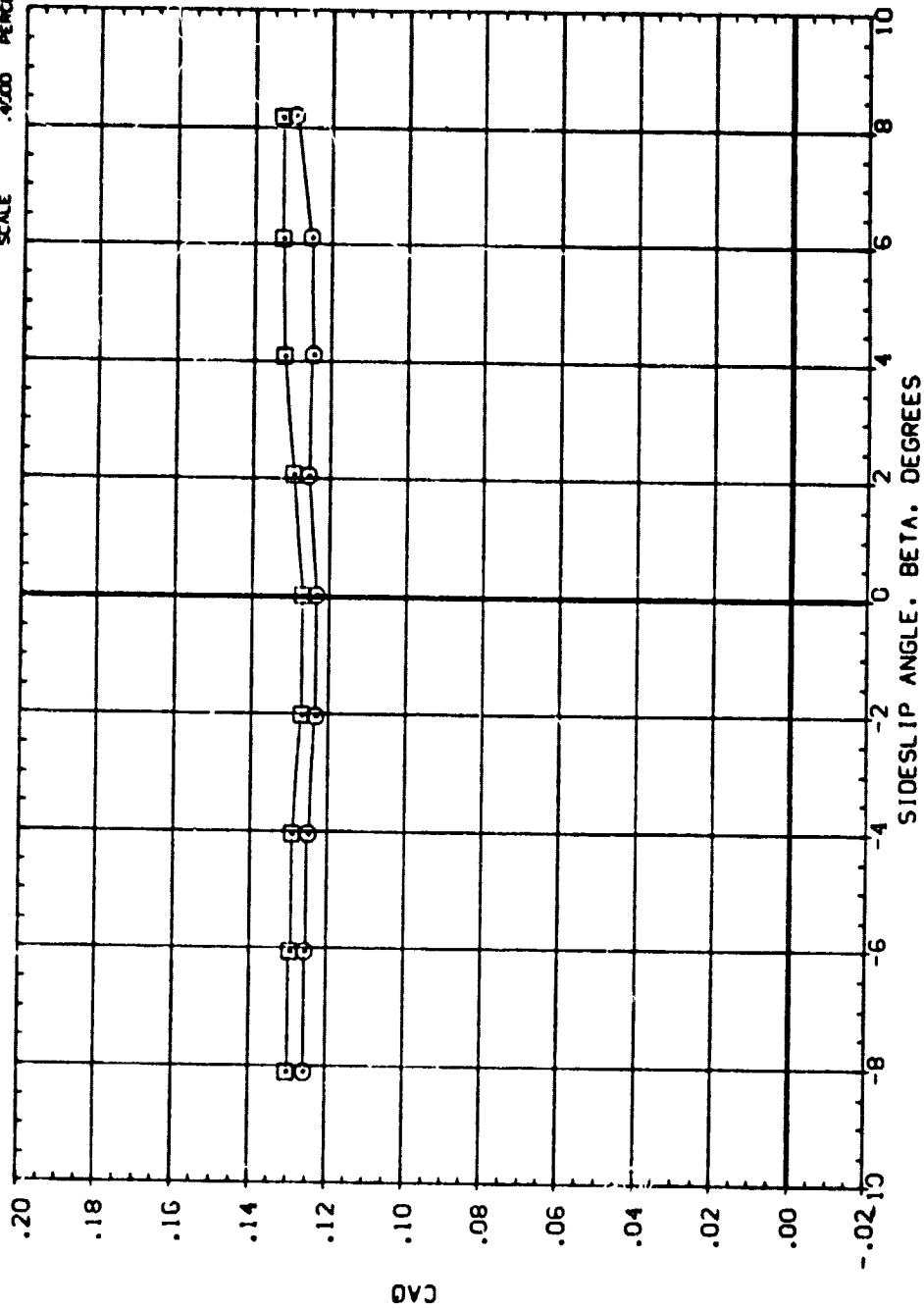


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809)  FA28. MSFC TVT 656. CONF IG. 0002E200PA11353 OR
 (FA2816)  FA28. MSFC TVT 656. CONF IG. 0002E200PA11353 OR

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7123 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

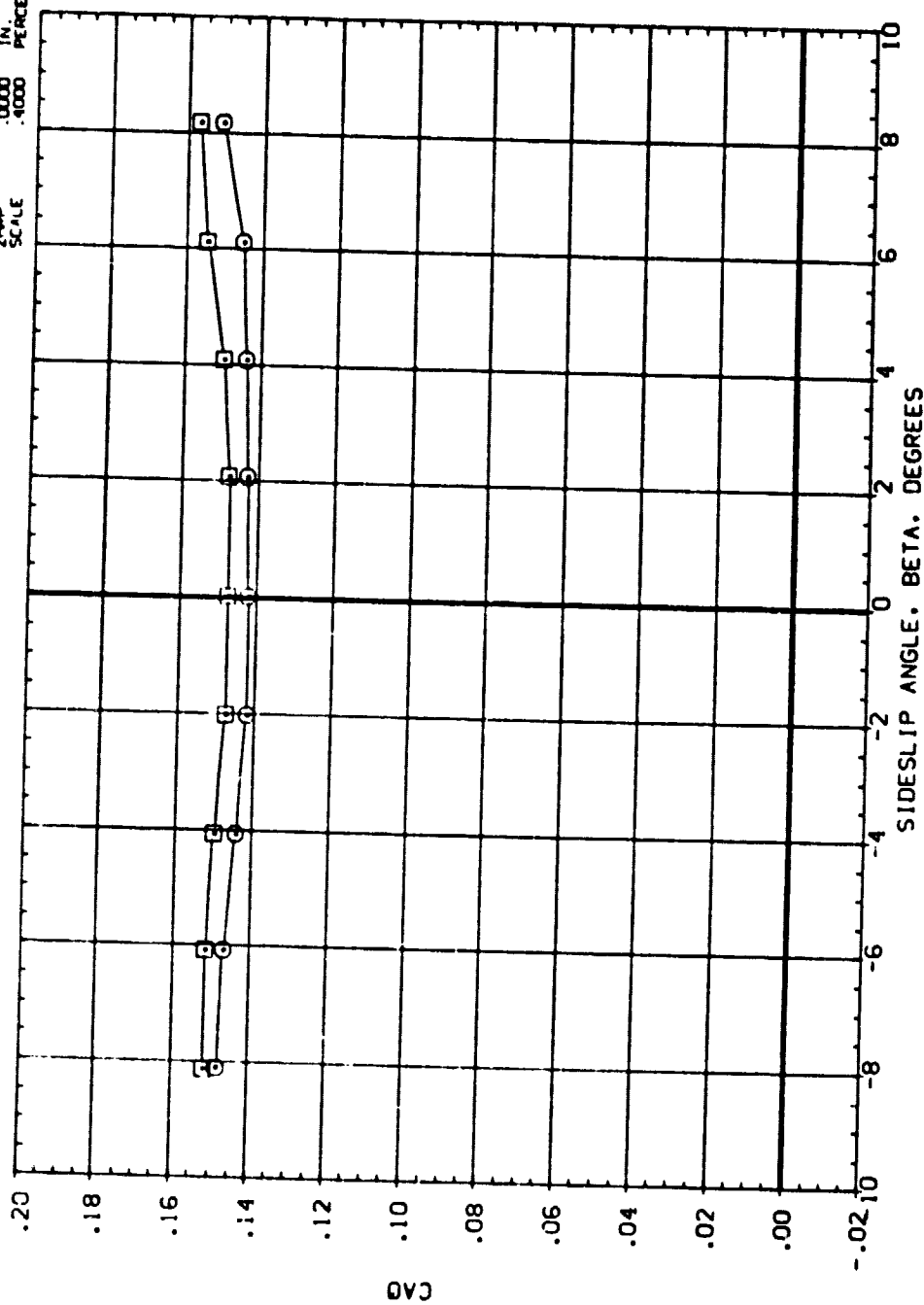


EFFECT OF GRIT ON WINGS

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2809) 8 FA28: MSFC TWT 656: CONF 16: 02VZ2MPPAATT353
 (FA2816) 8 FA28: MSFC TWT 656: CONF 16: 02VZ2MPPAATT353 GR

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 1N.
 BREF 3.7470 1N.
 TREF 2.7120 1N.
 YREF .0000 1N.
 ZREF .0000 1N.
 SCALE .4000 PERCENT

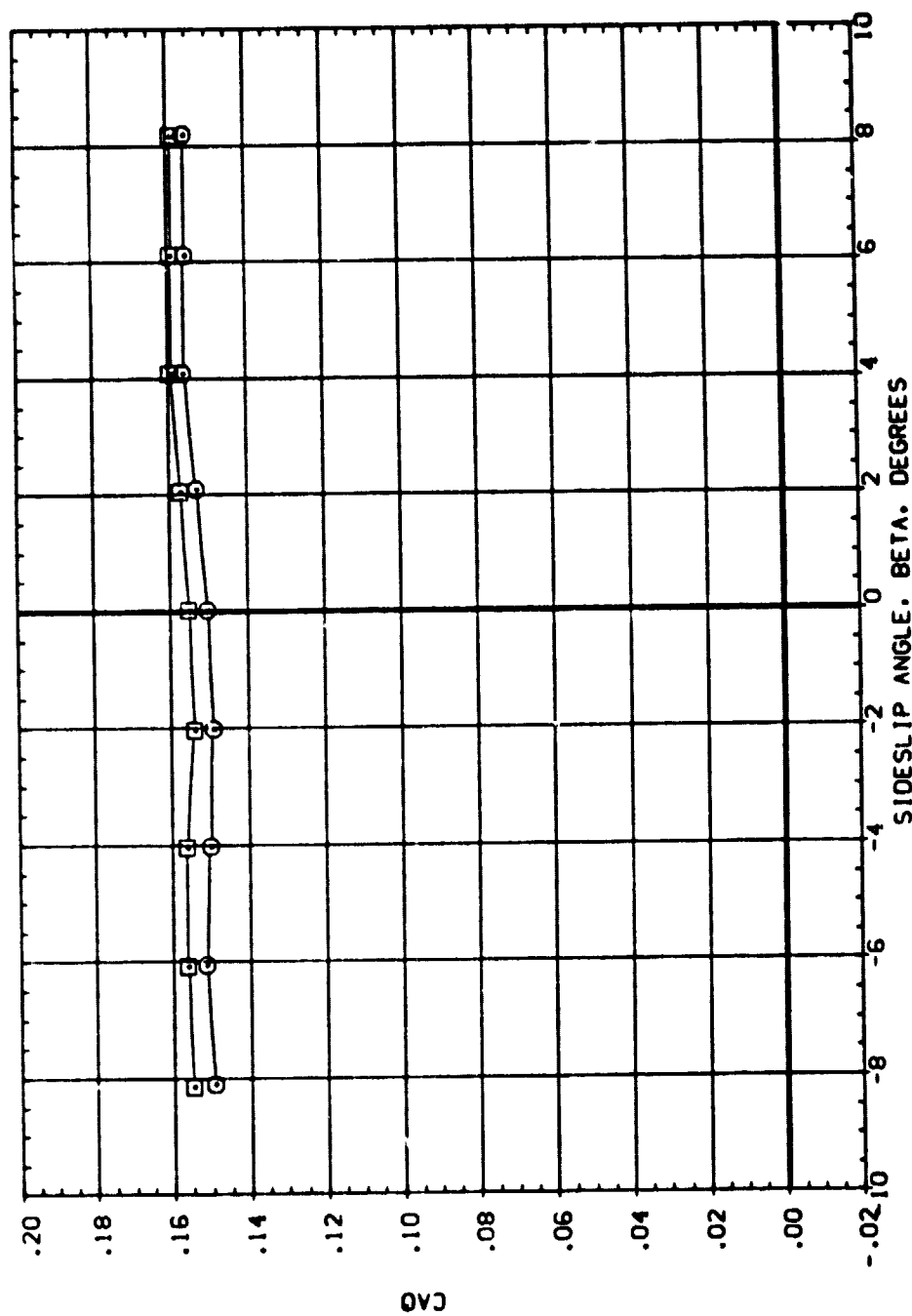


EFFECT OF GRIT ON WINGS

(O)MACH = 1.10

DATA SET SYMBOL: (FA2816)  CONFIGURATION DESCRIPTION: FA28. WSEC TUT 656. CONF 16. CNZE2PAPAA11353 OR FA29. WSEC TUT 656. CONF 16. CNZE2PAPAA11353 OR

REFERENCE INFORMATION:
 SREF 6.1960 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YAMP 2.7120 IN.
 YAMP .0000 IN.
 ZAMP .0000 IN.
 SCALE .4000 PERCENT

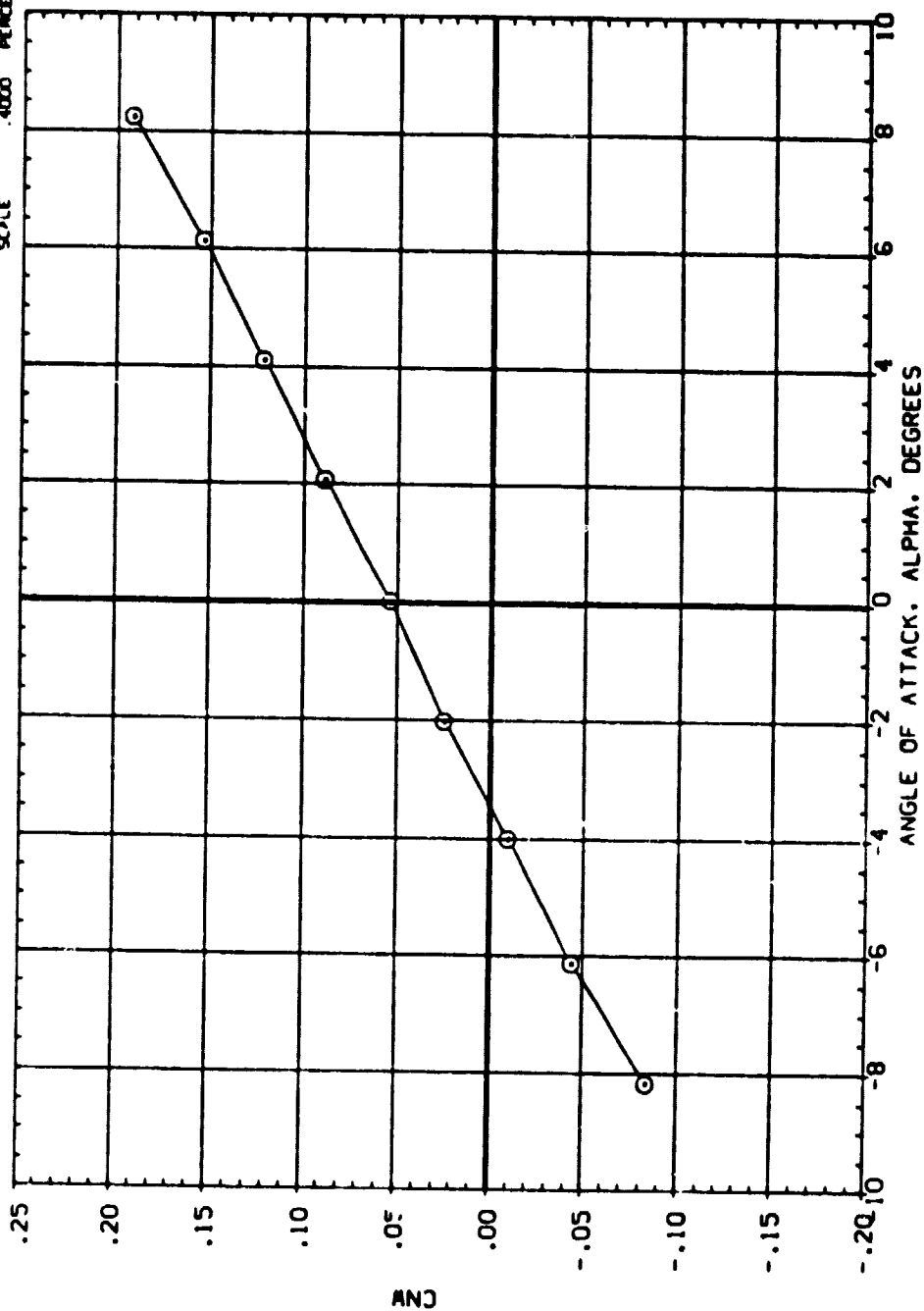


EFFECT OF GRIT ON WINGS

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2851) FA28. MSFC TWT 656. CONF 16. 02N2E2
 (FA2852) DATA NOT AVAILABLE
 (FA2854) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT



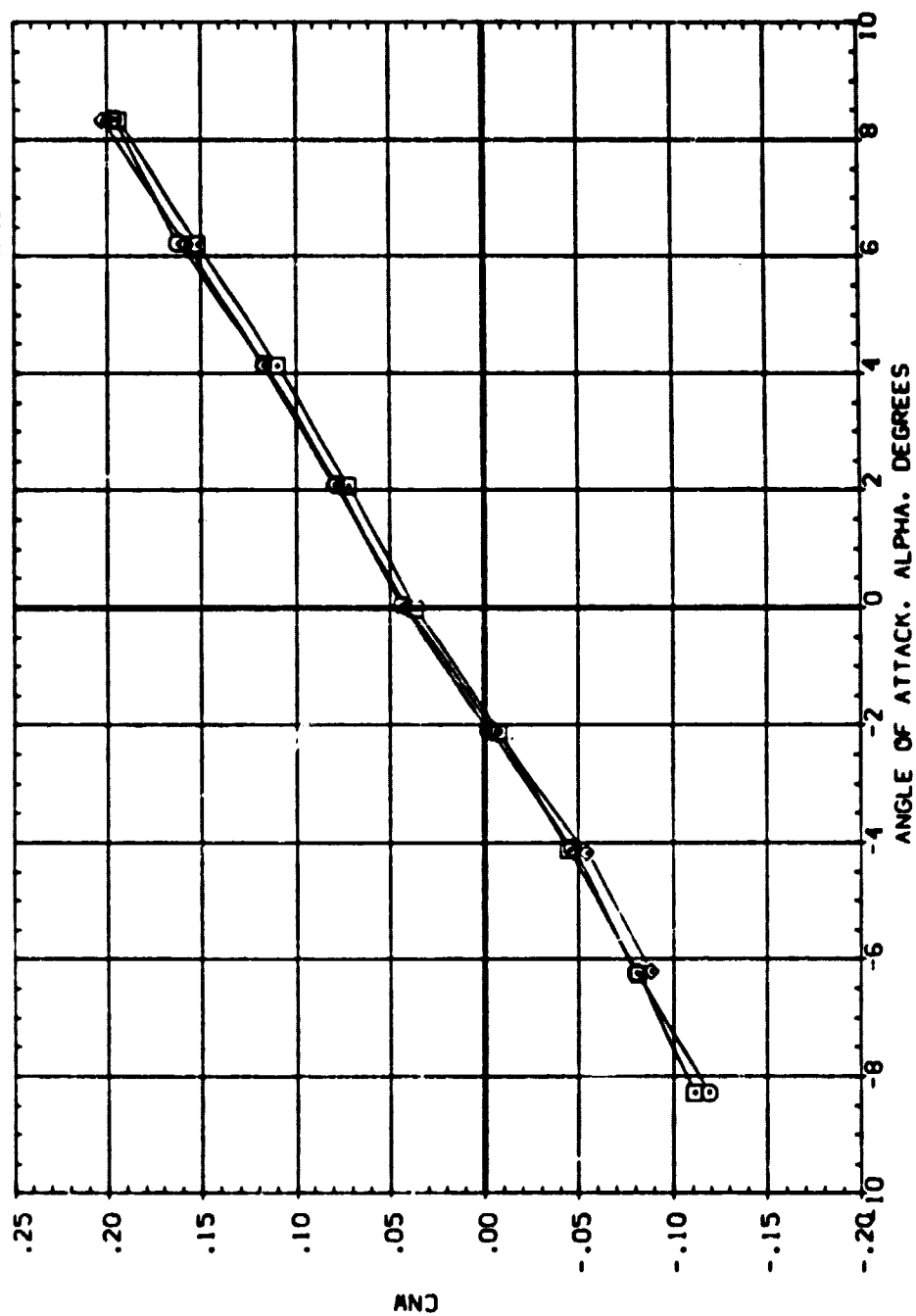
EFFECTS OF WING WAX

(A)MACH = .60

DATA SET SYMBOL: (FA2051) (FA2052) (FA2054)

CONFIGURATION DESCRIPTION: FA20: MSFC TWT 656: CONF 16: QDV322 VING GAP VAX FA20: MSFC TWT 656: CONF 16: QDV322 VING VAX CUT FA20: MSFC TWT 656: CONF 16: QDV322 VING VAX CUT

REFERENCE INFORMATION: SREF 6.1580 IN. LREF 5.1612 IN. BREF 3.7470 IN. XREF 2.7120 IN. YREF .0000 IN. ZREF .0000 IN. SCALE .4000 PERCENT

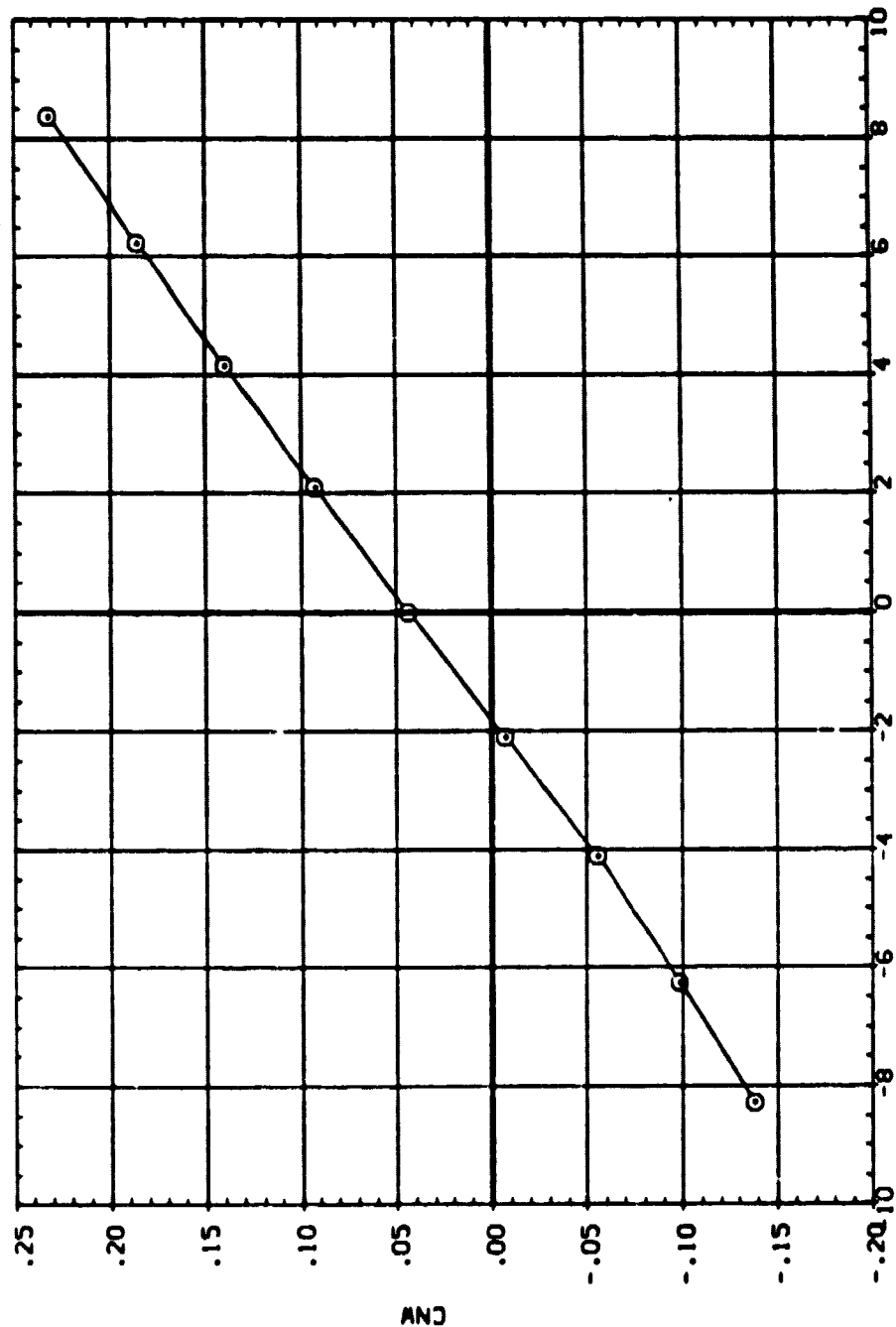


EFFECTS OF WING WAX

(B)MACH = .90

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28-105TC TUT 6521 CONFIG. 02022
 (FA2851) DATA NOT AVAILABLE
 (FA2852) DATA NOT AVAILABLE
 (FA2854) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF: 6.1500 IN.
 LREF: 5.1612 IN.
 BREF: 3.2470 IN.
 YREF: 2.7120 IN.
 YMAP: .0000 IN.
 ZMAP: .0000 IN.
 SCALE: .0000 PERCENT

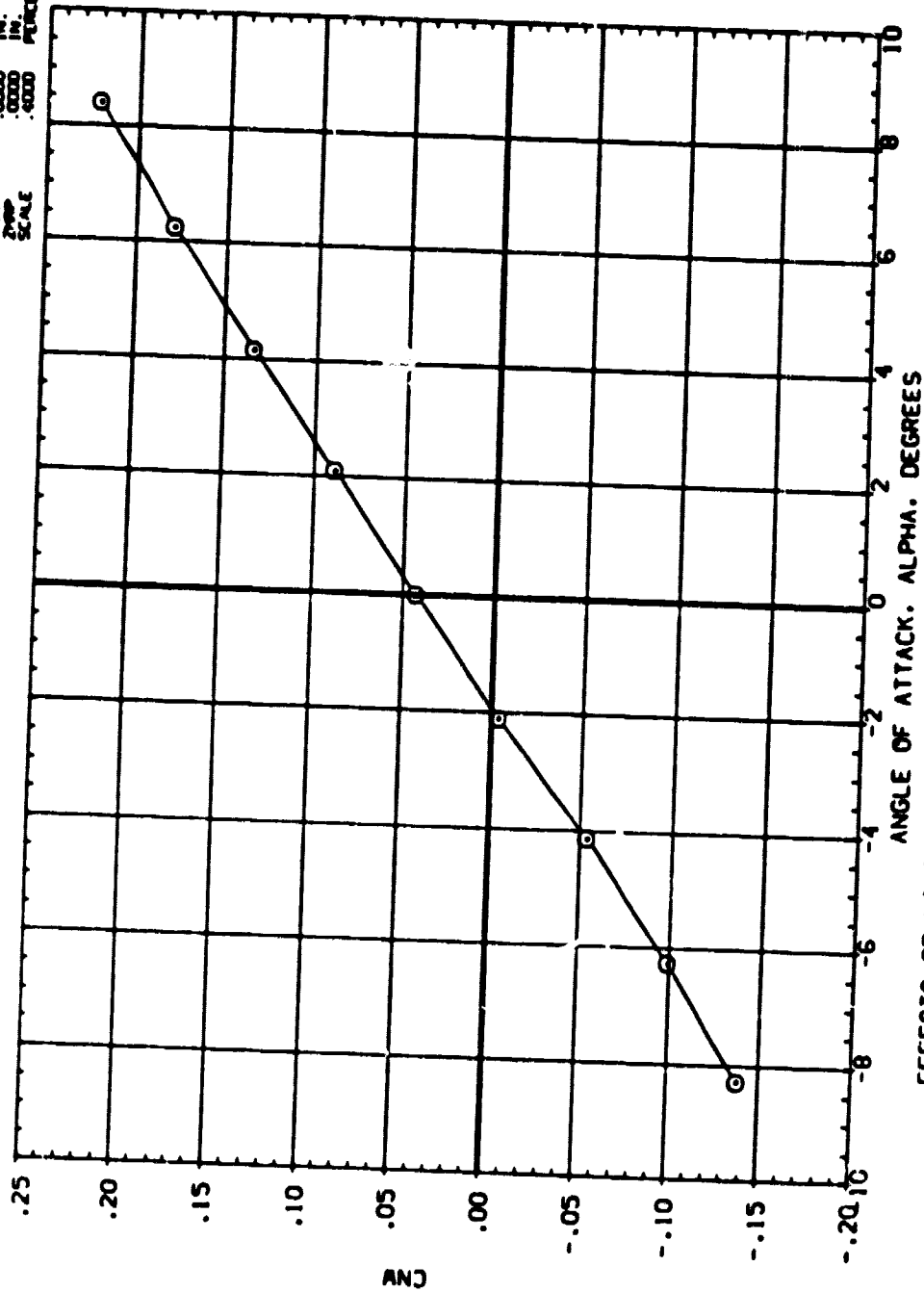


EFFECTS OF WING WAX

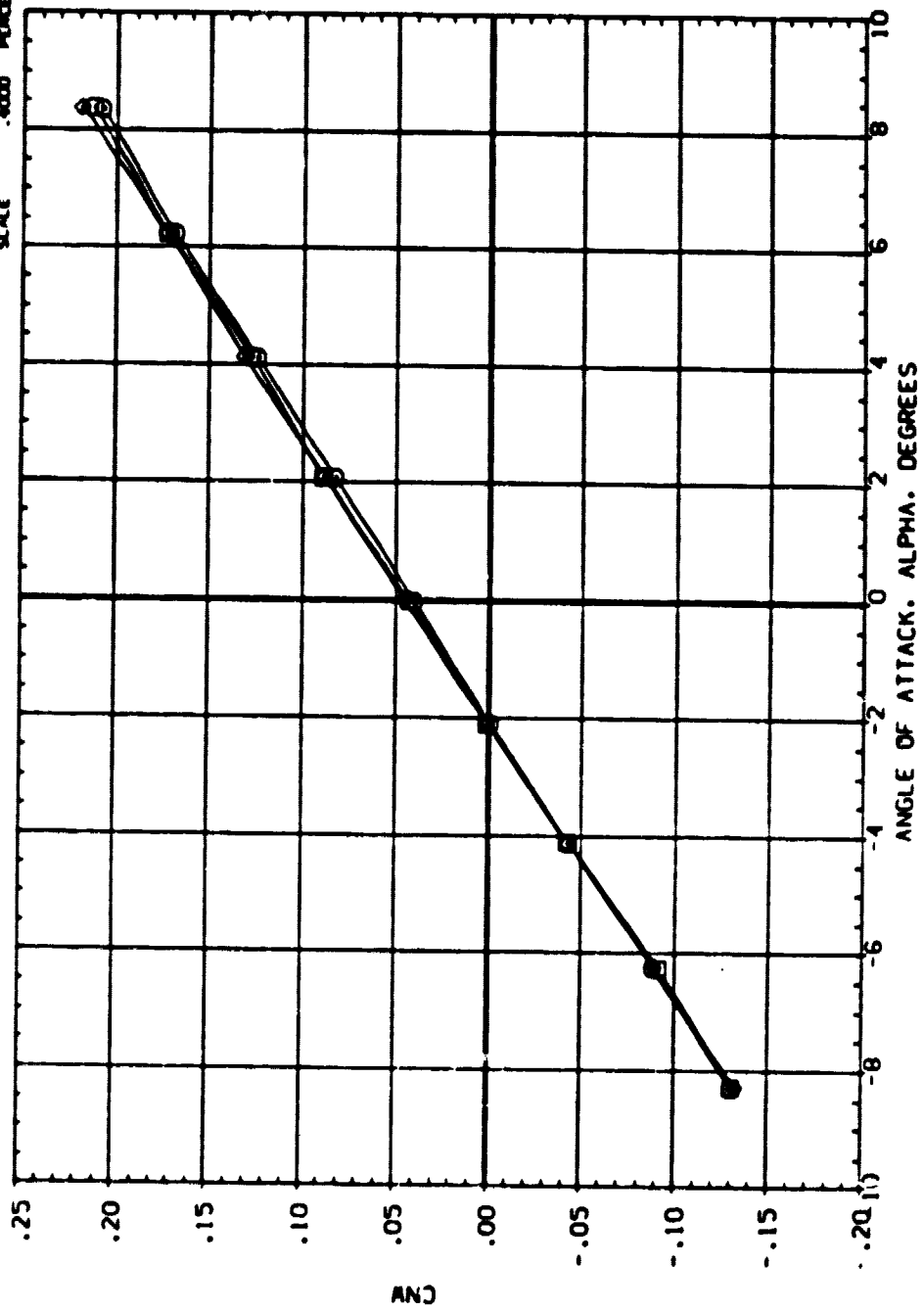
(C)MACH = 1.06

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA20-105C 105.05% CONFIG. 02V2E2
 (FA2051) DATA NOT AVAILABLE
 (FA2052) DATA NOT AVAILABLE
 (FA2054)

REFERENCE INFORMATION
 SET: 8-1880 80. IN
 LIFT: 3.1813 IN.
 DRAG: 3.1813 IN.
 YPR: 3.1813 IN.
 ZPR: 3.1813 IN.
 SCALE: .0000 PERCENT



REFERENCE INFORMATION	
SET	6.190 IN.
LAST	3.512 IN.
SET	3.747 IN.
WSP	2.712 IN.
WSP	.0000 IN.
SCALE	.0000 PERIN

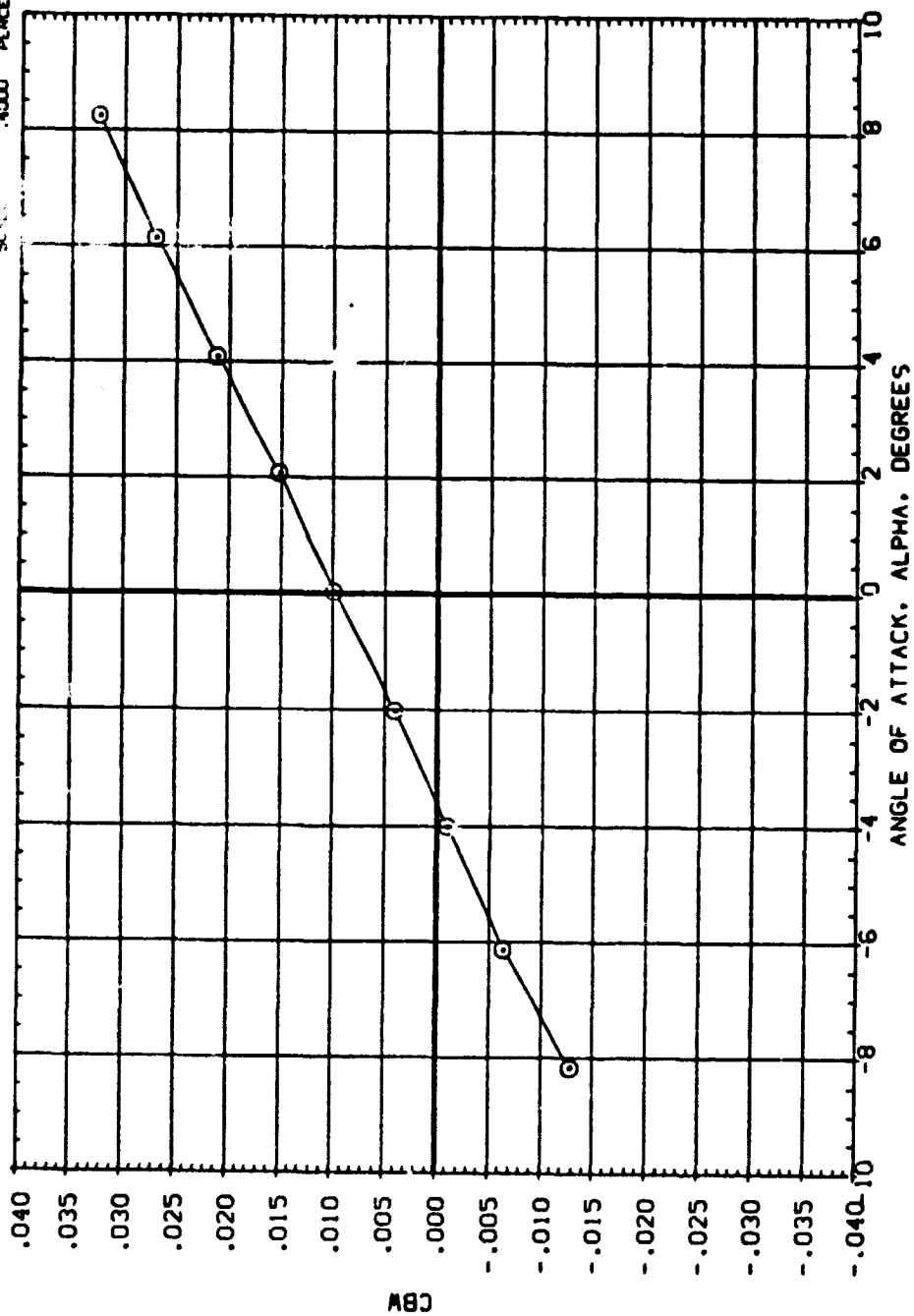


EFFECTS OF WING WAX

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2051) FA20. MSFC TWT 656. CONFIG. 02VZE2
 (FA2052) DATA NOT AVAILABLE
 (FA2054) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCAL .4000 PERCENT

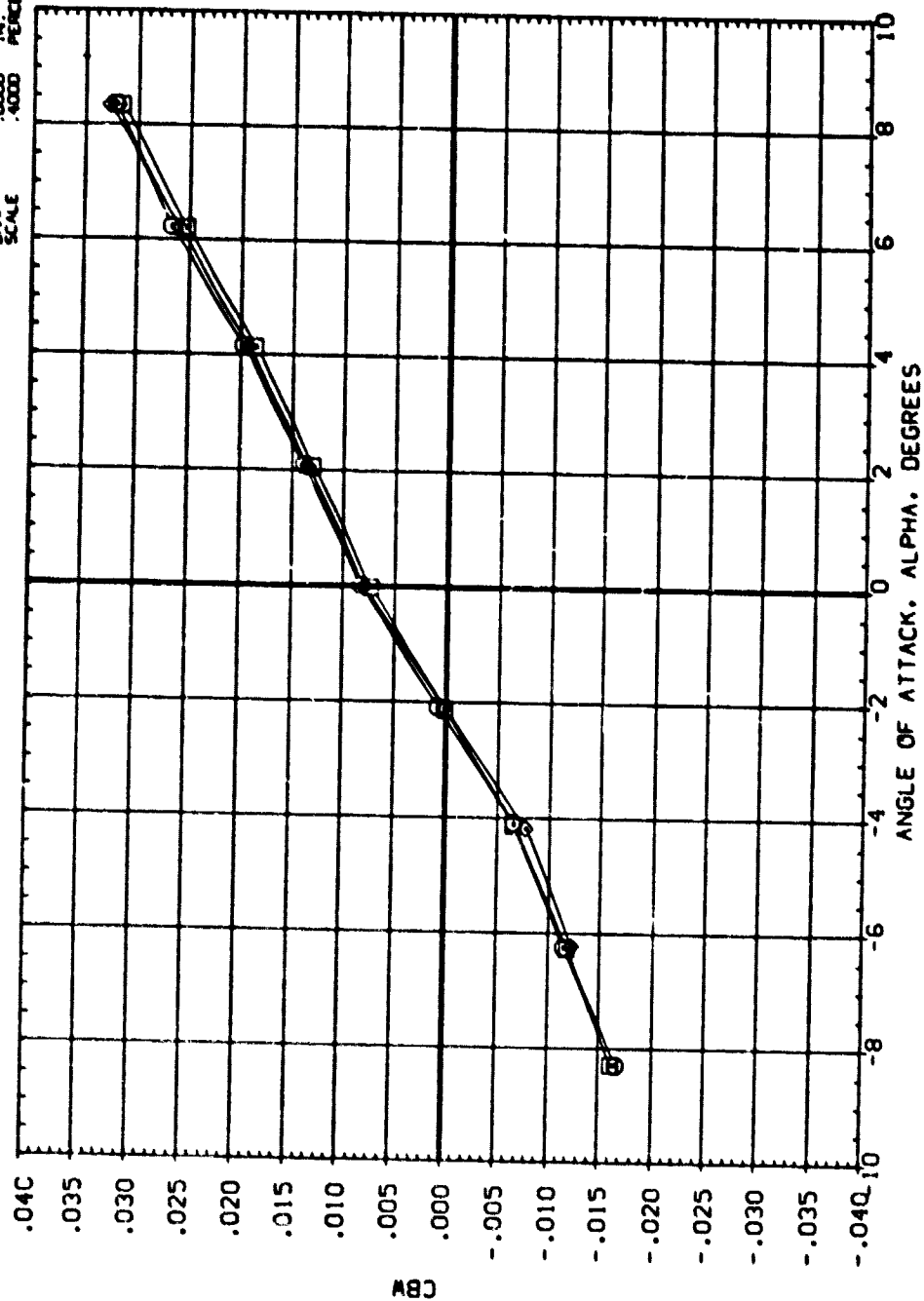


EFFECTS OF WING WAX

(A) MACH = .80

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA281) FA28. MSFC 147 656. CONF 10. 02V232 VING GAP WAX
 (FA282) FA28. MSFC 147 656. CONF 10. 02V232 VING GAP WAX
 (FA283) FA28. MSFC 147 656. CONF 10. 02V232 VING GAP WAX

REFERENCE INFORMATION
 SPOT 6.1980 SQ. IN.
 LEAD 5.1612 IN.
 WING 3.7470 IN.
 VING 2.7120 IN.
 WING .0000 IN.
 VING .0000 IN.
 SCALE .0000 PERCENT

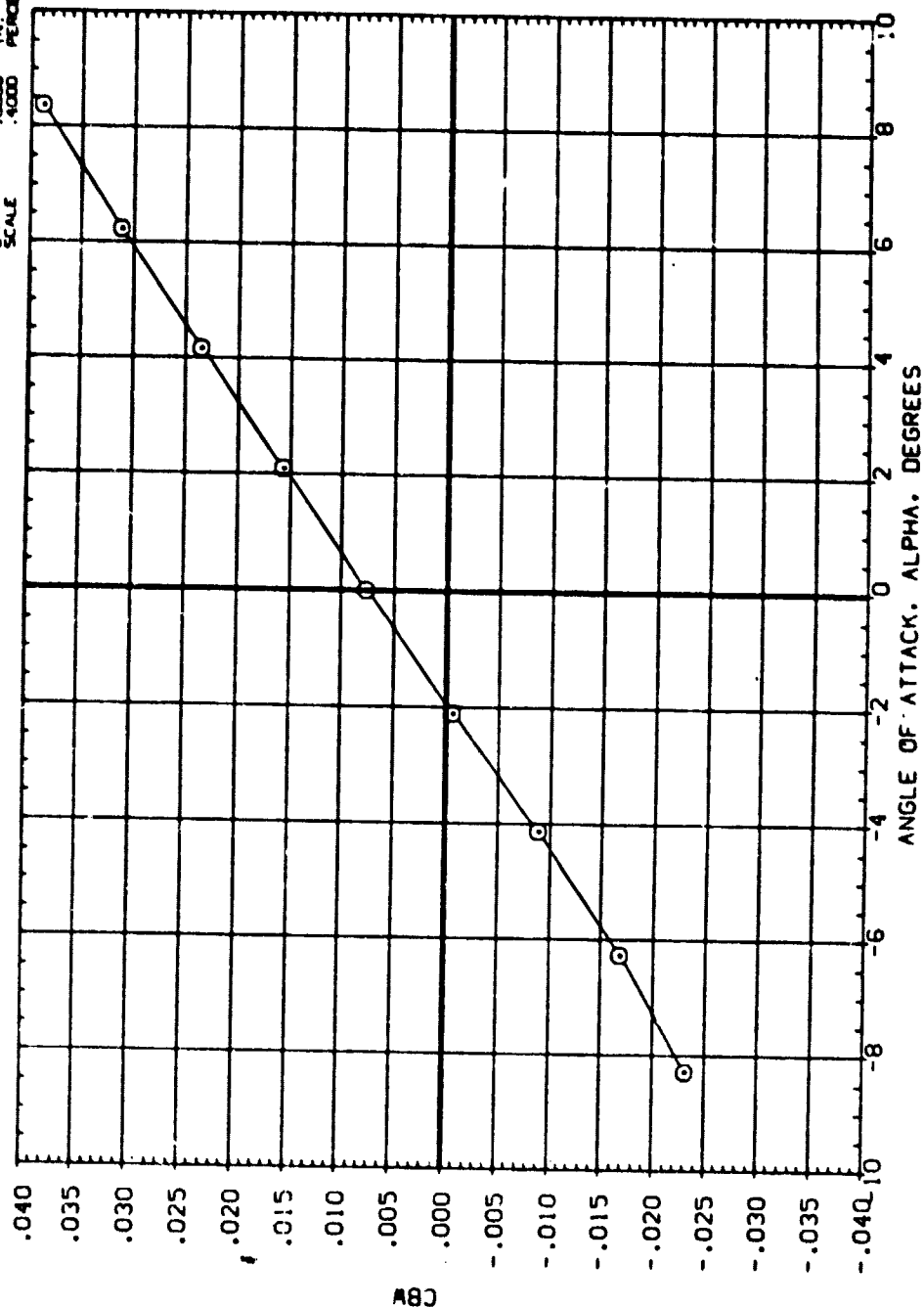


EFFECTS OF WING WAX

(B)MACH = .90

DATA SET SYMBOL: FA28. MSFC TWT 656. CONF IG. 03V2E2
 (FA2851)
 (FA2852)
 (FA2854)

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

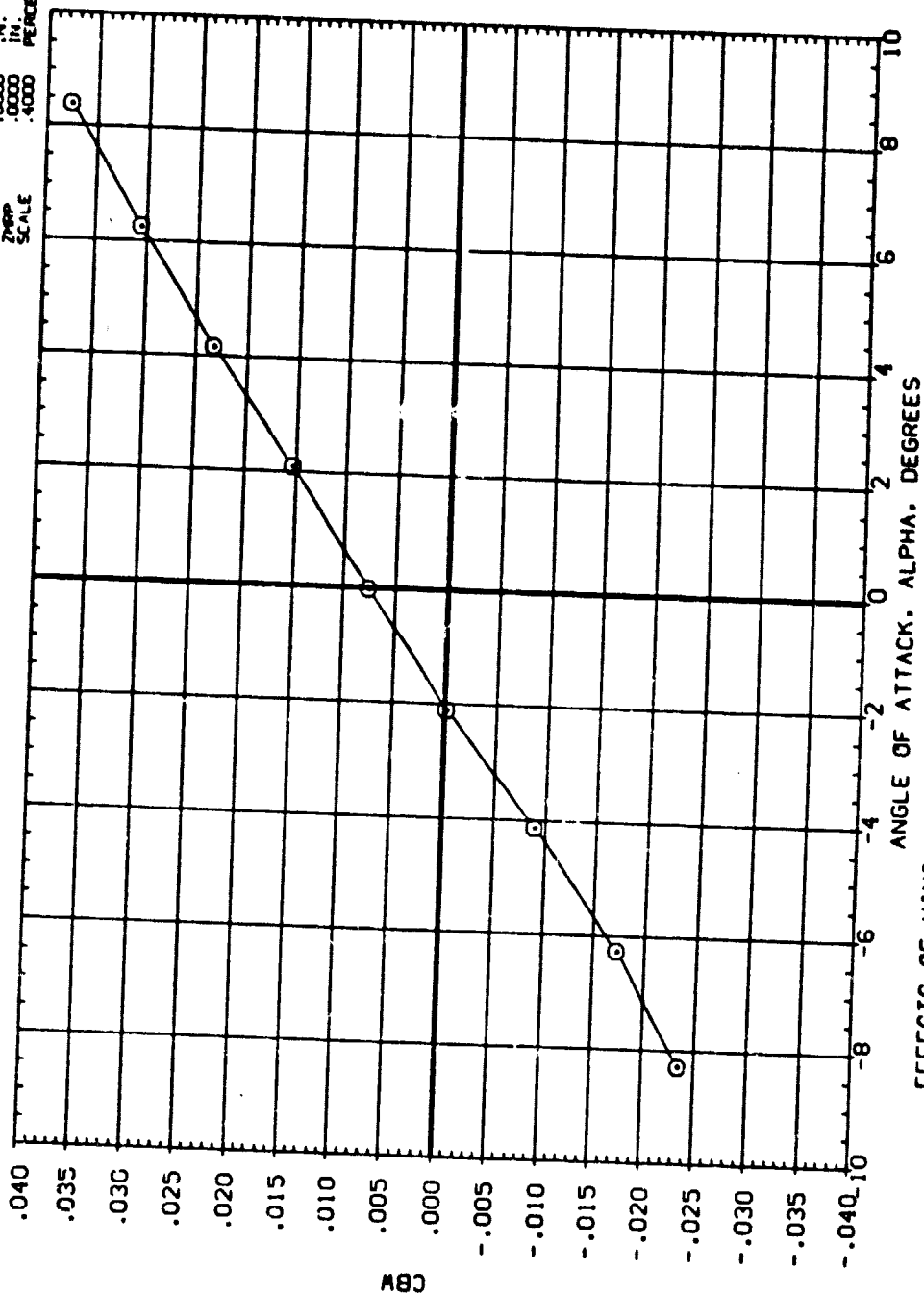


EFFECTS OF WING WAX

(C)MACH = 1.06

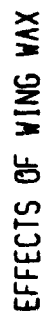
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2851) FA28. MSFC TWT 636. CONFIG. 02V2E2
 (FA2852) DATA NOT AVAILABLE
 (FA2854) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 IN.
 SREF 5.1612 IN.
 SREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



EFFECTS OF WING WAX
 (O)MACH = 1.10

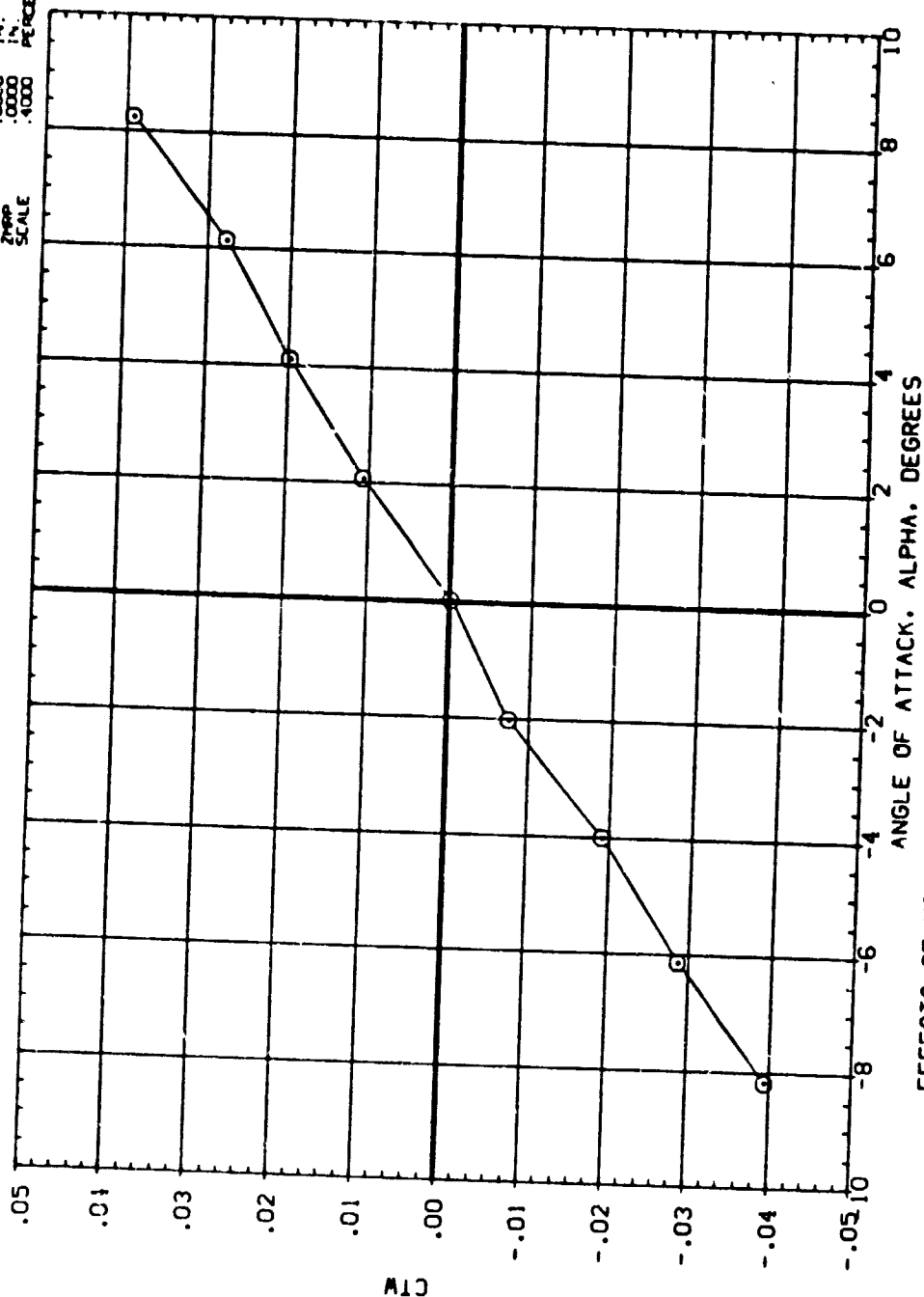
	REFERENCE INFORMATION	SO. IN.	IN.	PERCENT
SREF		6.1980	IN.	
LREF		5.1612	IN.	
REF		3.7470	IN.	
KREF		2.7120	IN.	
VPREF		.0000	IN.	
VPREF		.0000	IN.	
SCALE		.0000	PERCENT	



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DATA SET SYMBOL: FA280, MSFC INT 656, CONFIG. 02V2C2
 (FA2851)
 (FA2852)
 (FA2854)

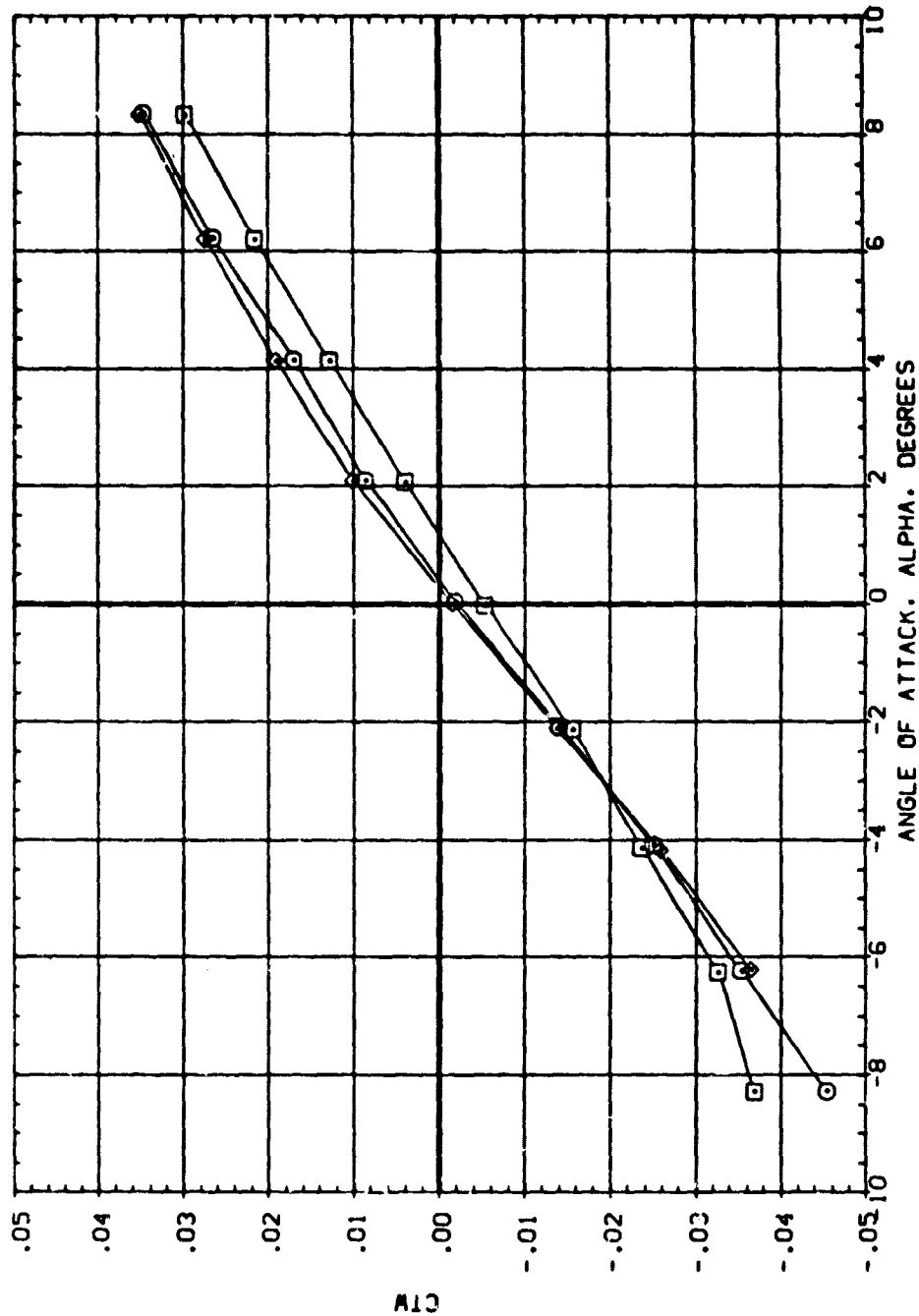
REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECTS OF WING WAX
 (A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2051) FA20: HSPC TVT 656: CONF IG. Q2V2E2 VING GAP WAX
 (FA2052) FA20: HSPC TVT 656: CONF IG. Q2V2E2 VING GAP WAX
 (FA2054) FA20: HSPC TVT 656: CONF IG. Q2V2E2 VING GAP WAX

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

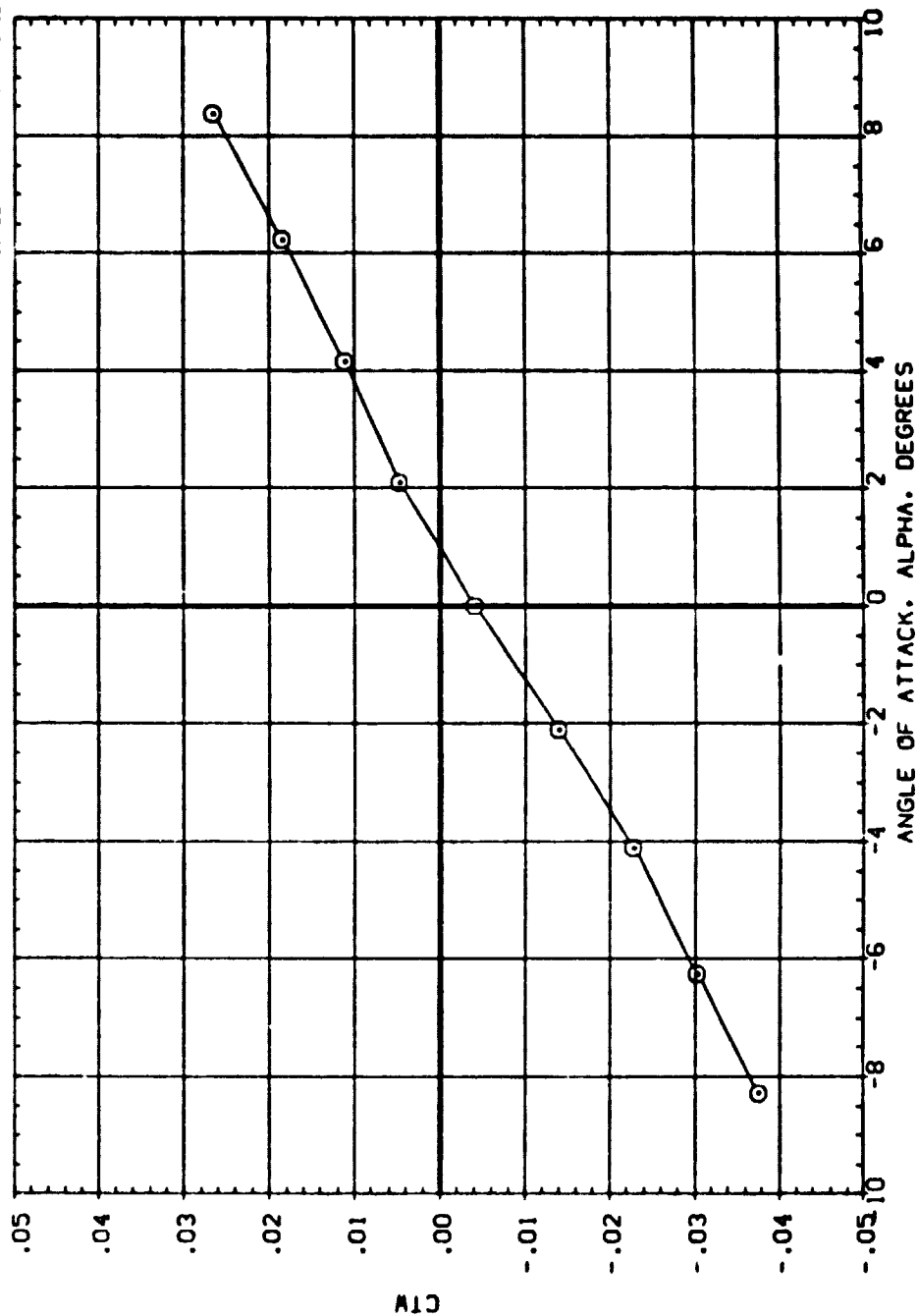


EFFECTS OF WING WAX

(B)MACH = .90

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2051) FA20. MSFC TWT 655. CONFIG. 02V2E2
 (FA2052) DATA NOT AVAILABLE
 (FA2054) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

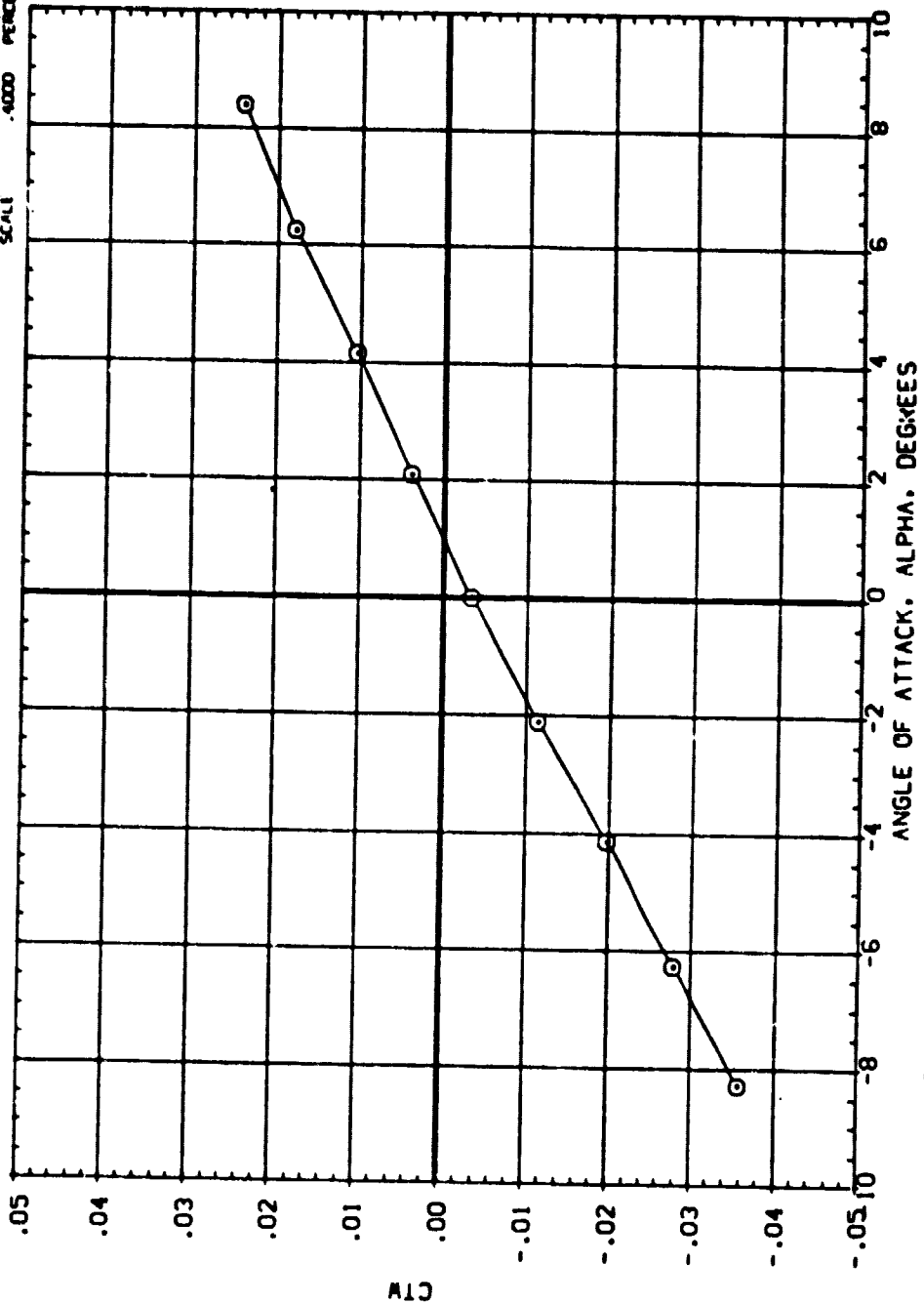


EFFECTS OF WING WAX

(C)MACH = 1.06

DATA SET SYMBOL: 88
 CONFIGURATION DESCRIPTION: FA28, HREC TWT 656, CONFIG. 02V2C2
 (FA2851) DATA NOT AVAILABLE
 (FA2852) DATA NOT AVAILABLE
 (FA2854)

REFERENCE INFORMATION
 SREF: 6.1880 IN.
 LREF: 5.1612 IN.
 SREF: 3.3470 IN.
 SREF: 2.7120 IN.
 TREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT

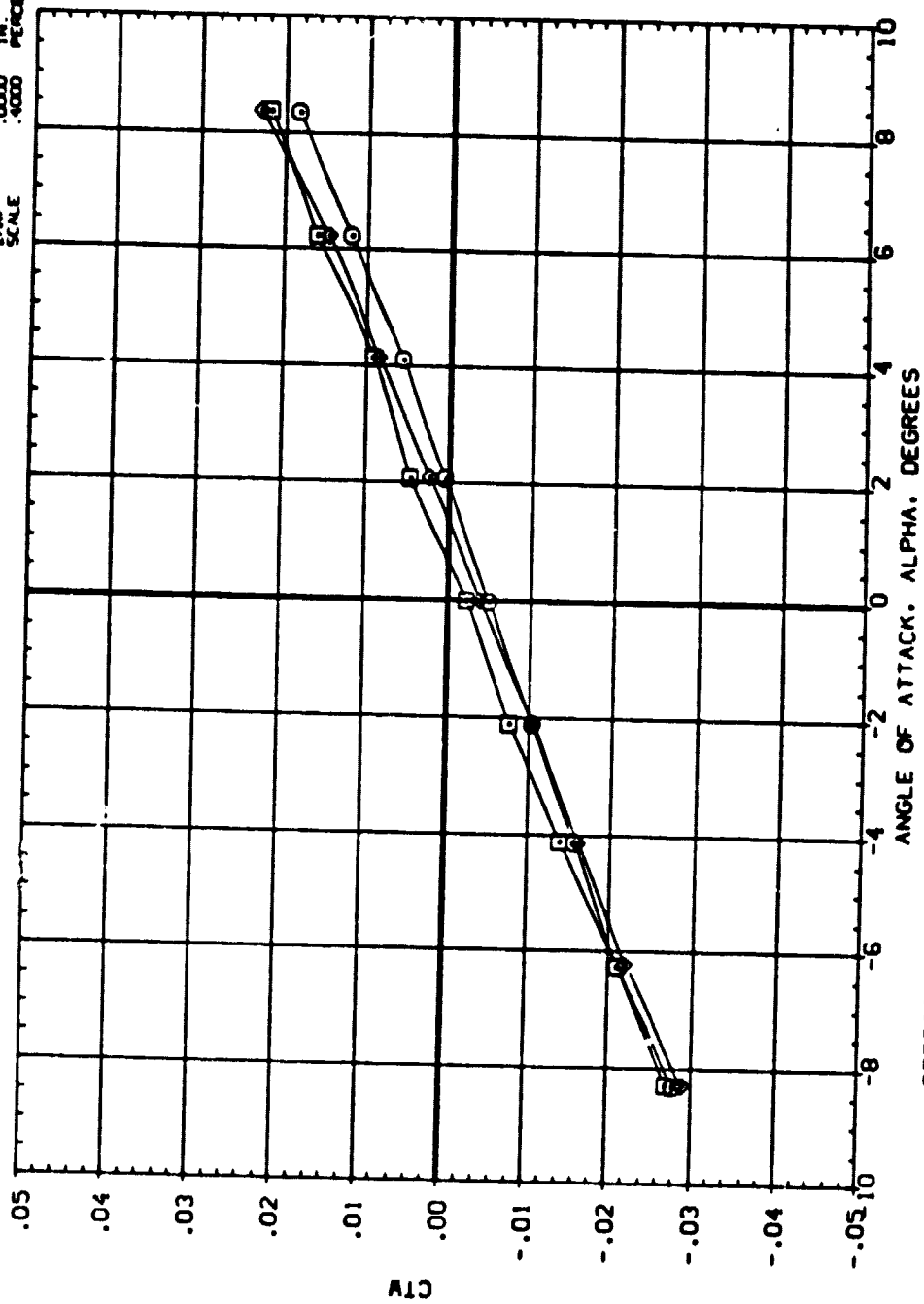


EFFECTS OF WING WAX

(0)MACH = 1.10

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2051) FA20: MSC TAT 625. CONF IG. Q2V2E2
 (FA2052) FA20: MSC TAT 625. CONF IG. Q2V2E2 WING GAP MAX
 (FA2054) FA20: MSC TAT 625. CONF IG. Q2V2E2 WING GAP CUT

REFERENCE INFORMATION
 SHEET 6.1980 50. IN
 LIFT 3.1612 IN.
 DRAG 2.7470 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .4000 PERCENT

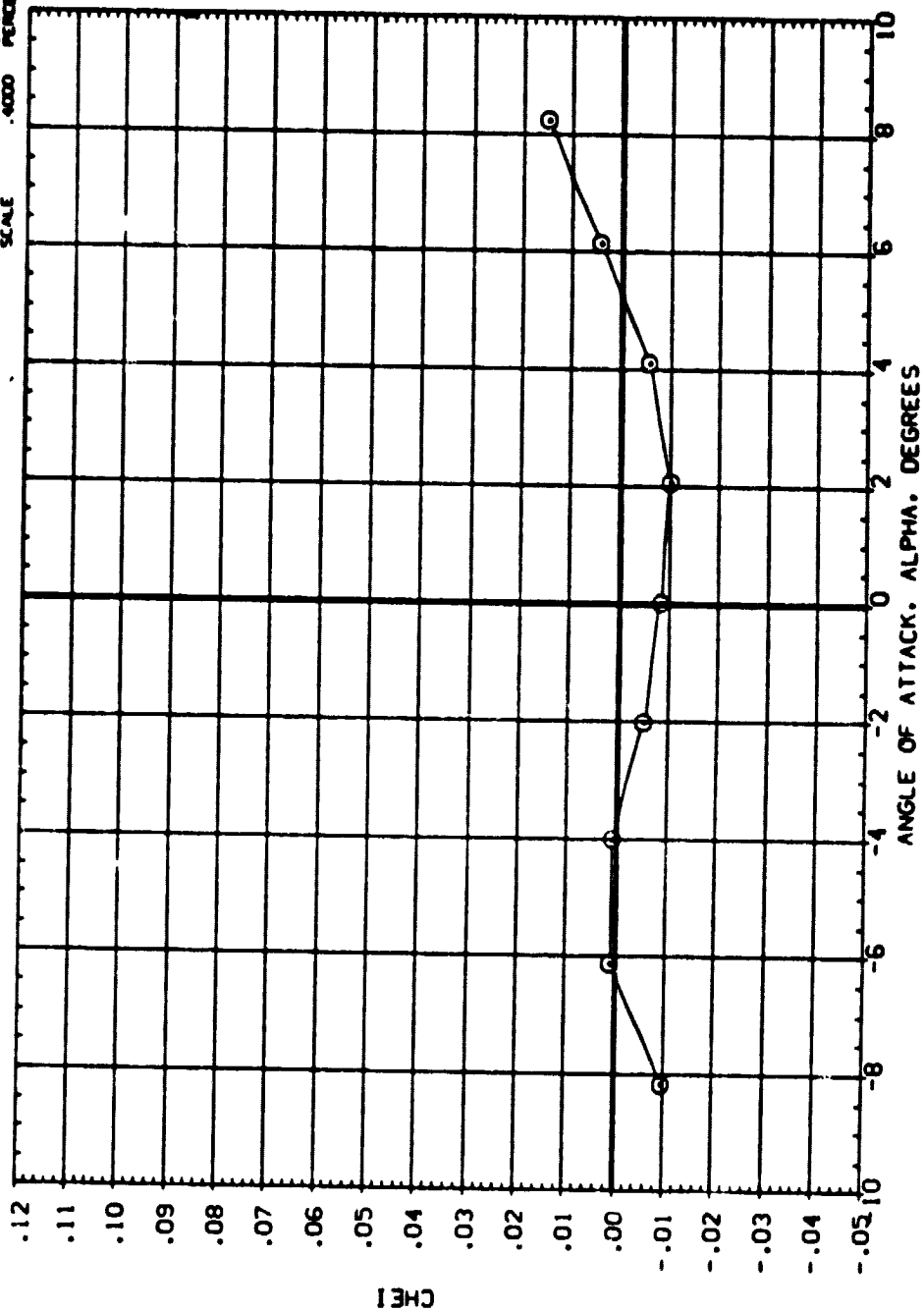


EFFECTS OF WING GAP

(E)MACH = 1.25

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA2B, NPFC, TWT, GSE, CONF 16, GVZEE2
 (FA2B51) DATA NOT AVAILABLE
 (FA2B52) DATA NOT AVAILABLE
 (FA2B54)

REFERENCE INFORMATION
 SET: 5.1580 IN.
 LIFT: 5.1612 IN.
 DRIFT: 3.7470 IN.
 WIND: 2.7120 IN.
 WIND: .0000 IN.
 SCALE: .4000 PERCENT

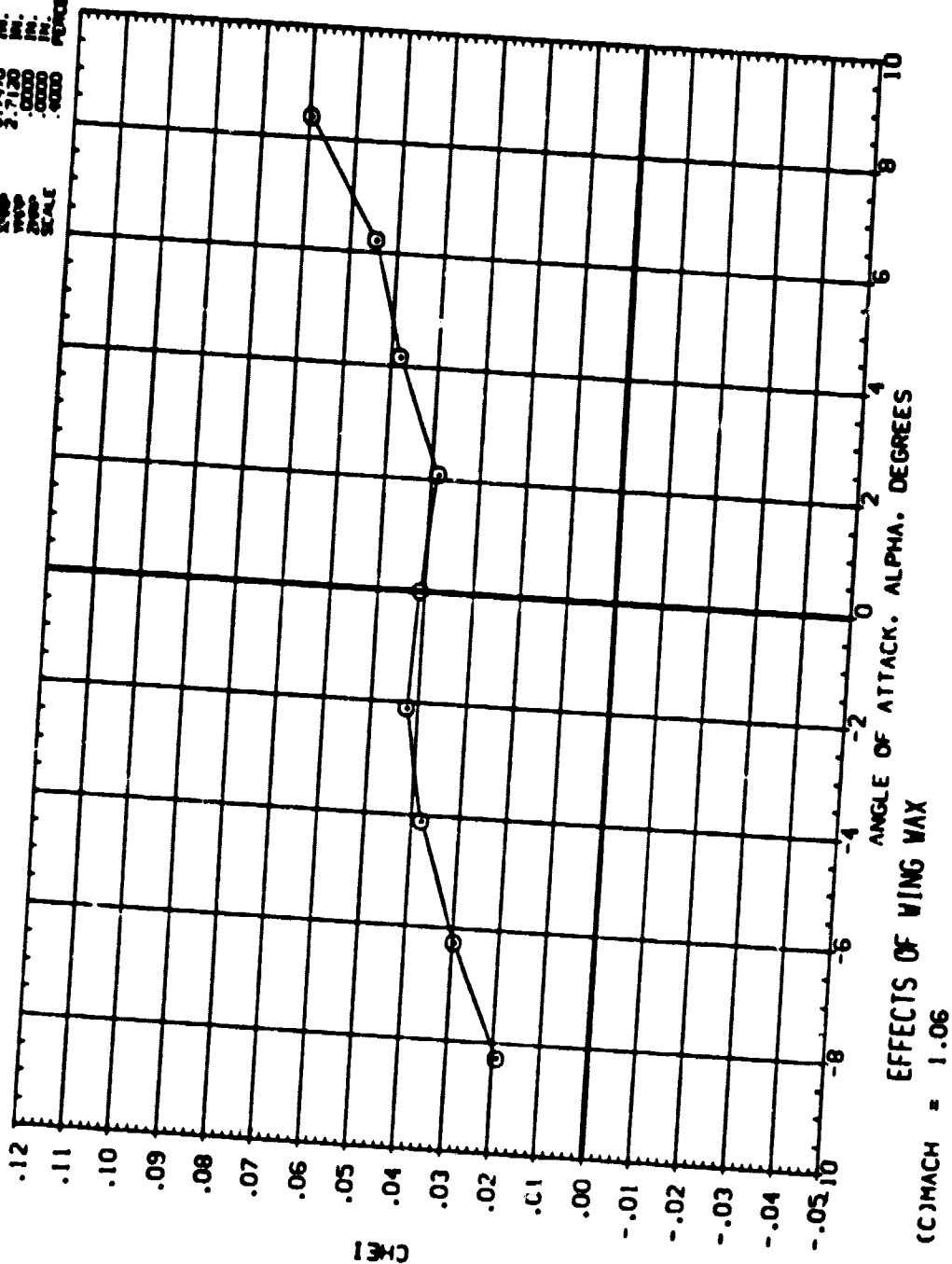


EFFECTS OF WING WAX

(A)MACH = .60

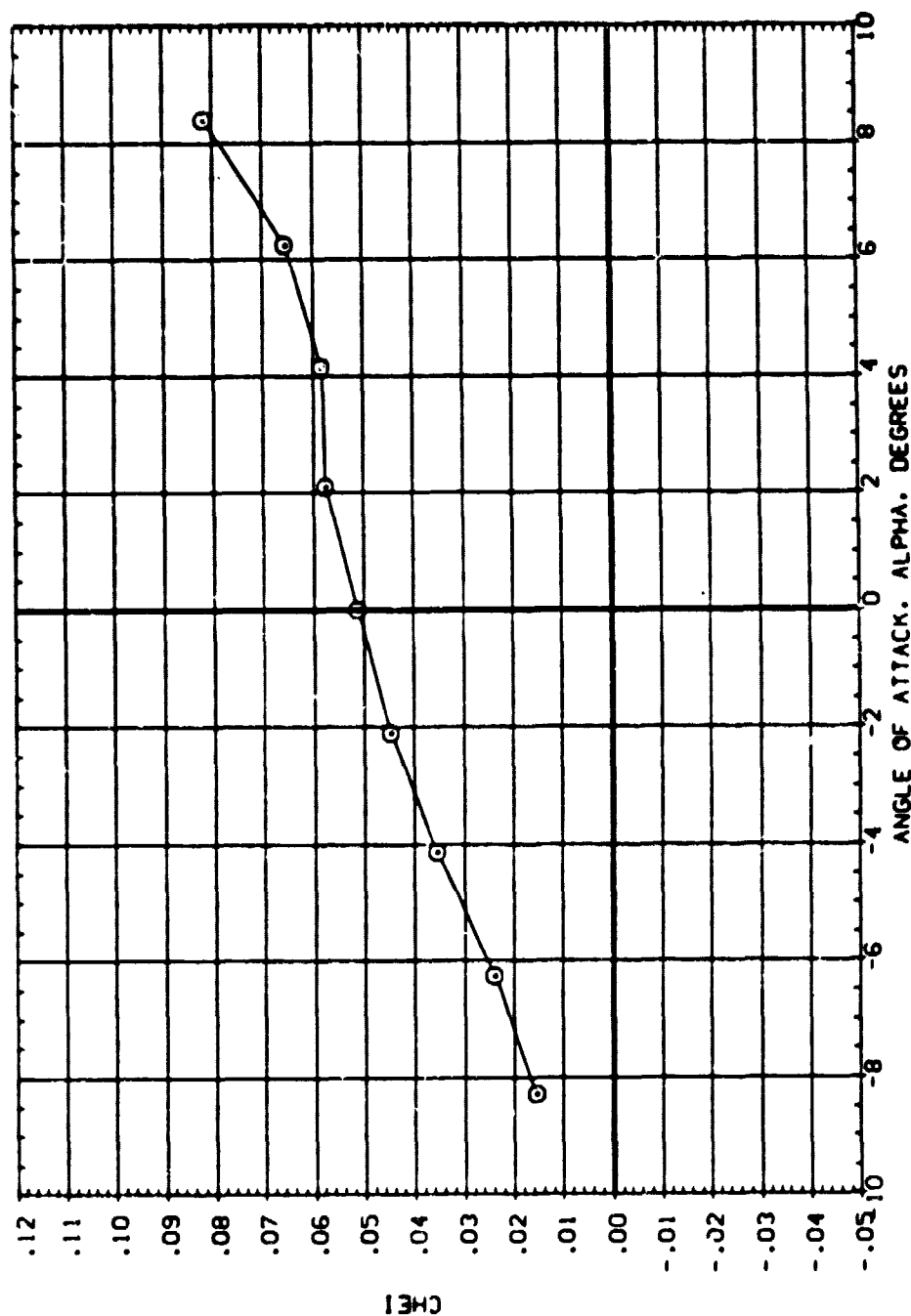
DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: CASE 197C TWT GSA. CONF 16. G00012
 (PAGE 1) DATA NOT AVAILABLE
 (PAGE 2) DATA NOT AVAILABLE
 (PAGE 3) DATA NOT AVAILABLE

REFERENCE INFORMATION
 REF: 8-1500 IN. IN.
 LIFT: 5-1413 IN. IN.
 DRAG: 3-7170 IN. IN.
 MOM: 3-7120 IN. IN.
 WTS: .0000 IN. IN.
 SCALE: .0000 IN. IN.
 PERIOD: .0000 IN. IN.



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REF	6.1980	90.	MM
LET	5.1612	MM.	
REF	3.7470	MM.	
WOP	2.7120	MM.	
WOP	.0000	MM.	
WOP	.0000	MM.	
SCALE	.4000	PERIODS	



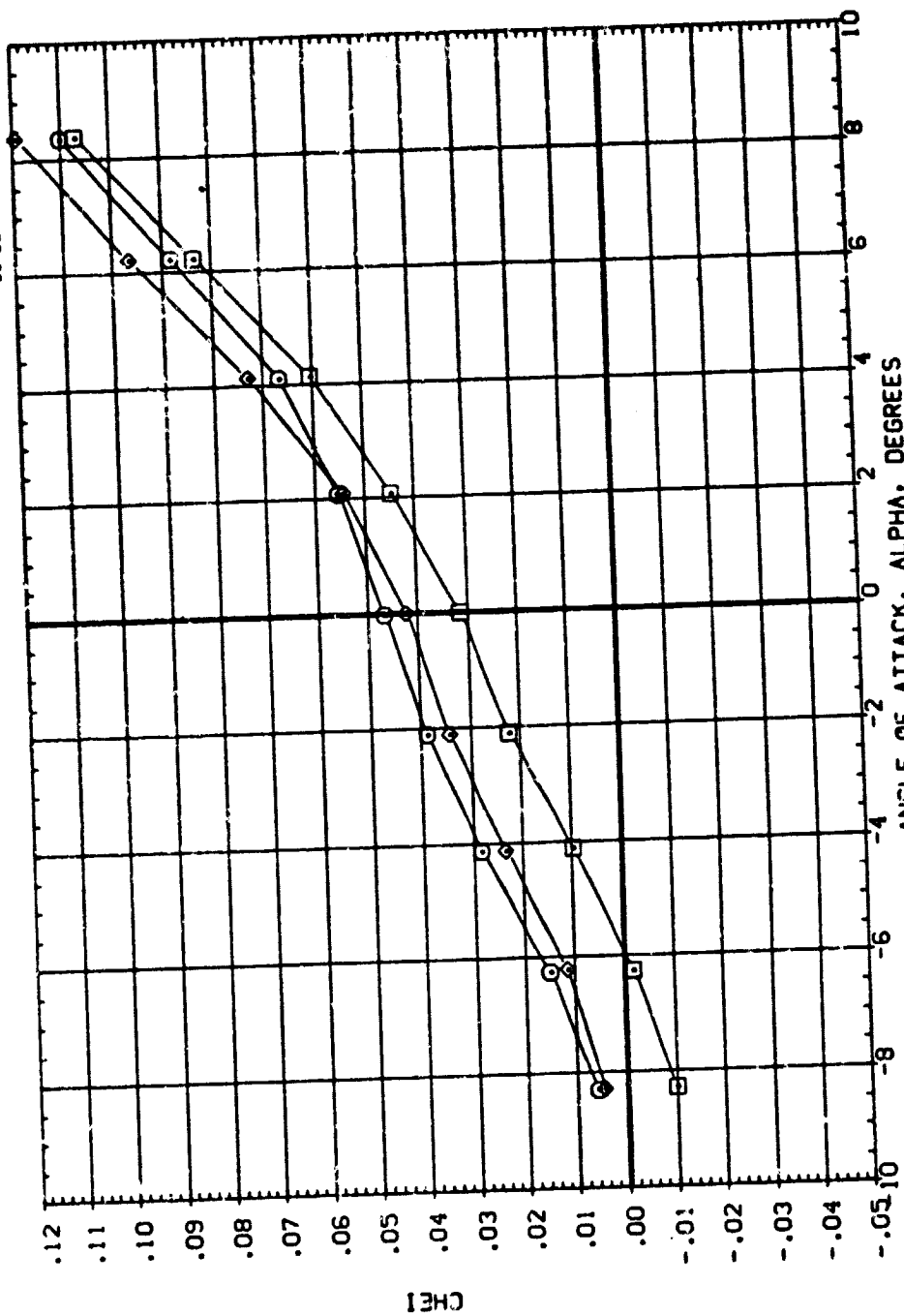
EFFECTS OF WING WAX

 $(D)_{\text{HACH}} = 1.10$

DATA SET SYMBOL: (FA28B1)
 (FA28B2)
 (FA28B3)
 (FA28B4)


CONFIGURATION DESCRIPTION
 FA28: MSFC TWT 656. CONF 16. Q2V2E2 VING GAP VAX
 FA28: MSFC TWT 656. CONF 16. Q2V2E2 VING GAP VAX
 FA28: MSFC TWT 656. CONF 15. Q2V2E2 VING VAX CUT

REFERENCE INFORMATION
 SREF: 6.1880 IN.
 LREF: 3.1812 IN.
 BREF: 3.7170 IN.
 XREF: 2.7170 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .4000 PERCENT

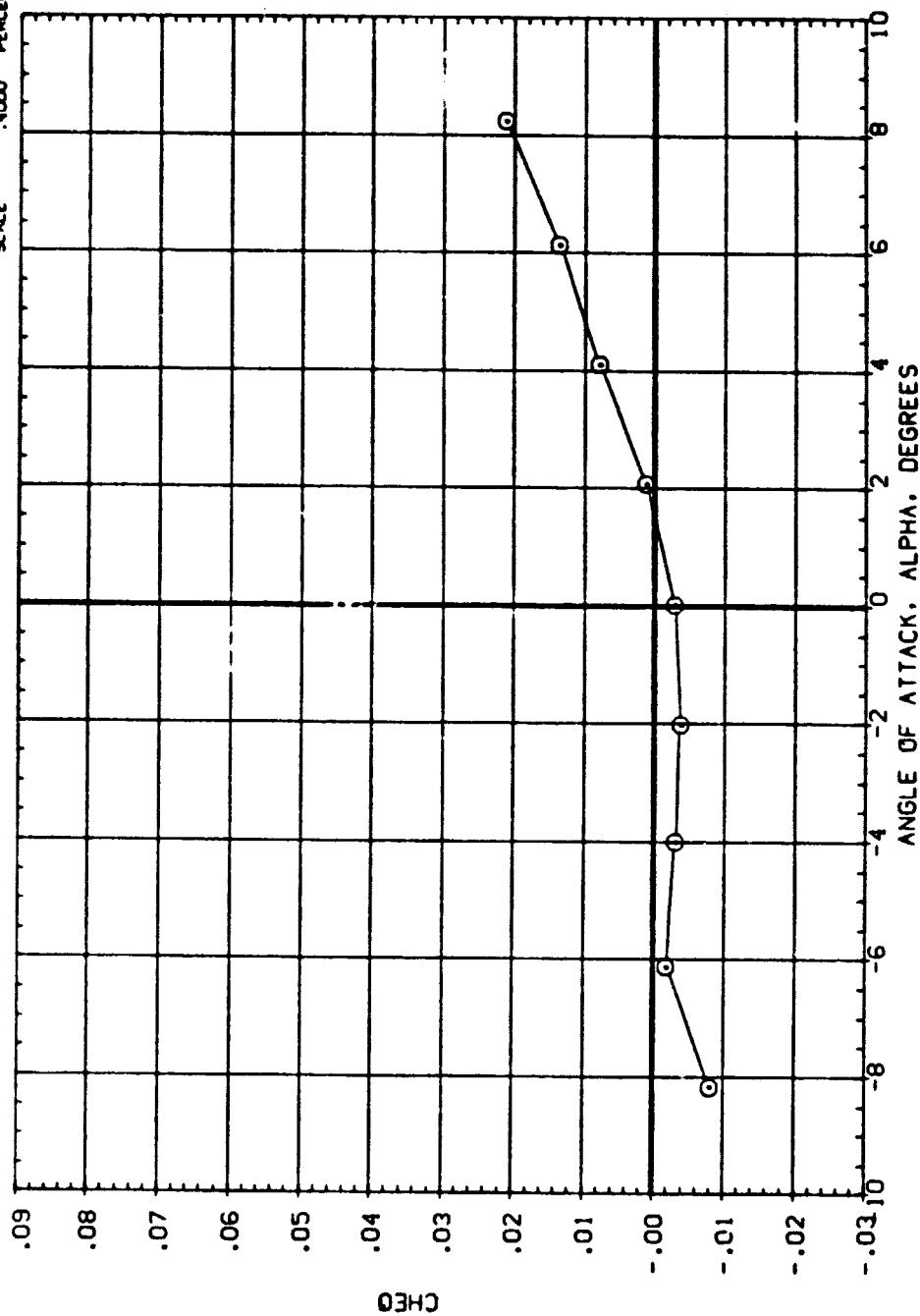


EFFECTS OF WING WAX

(E)MACH = 1.25

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FA2851) FA28, MSFC, TWT 656, CONFIG. 02VZ22
 (FA2852) DATA NOT AVAILABLE
 (FA2854) DATA NOT AVAILABLE

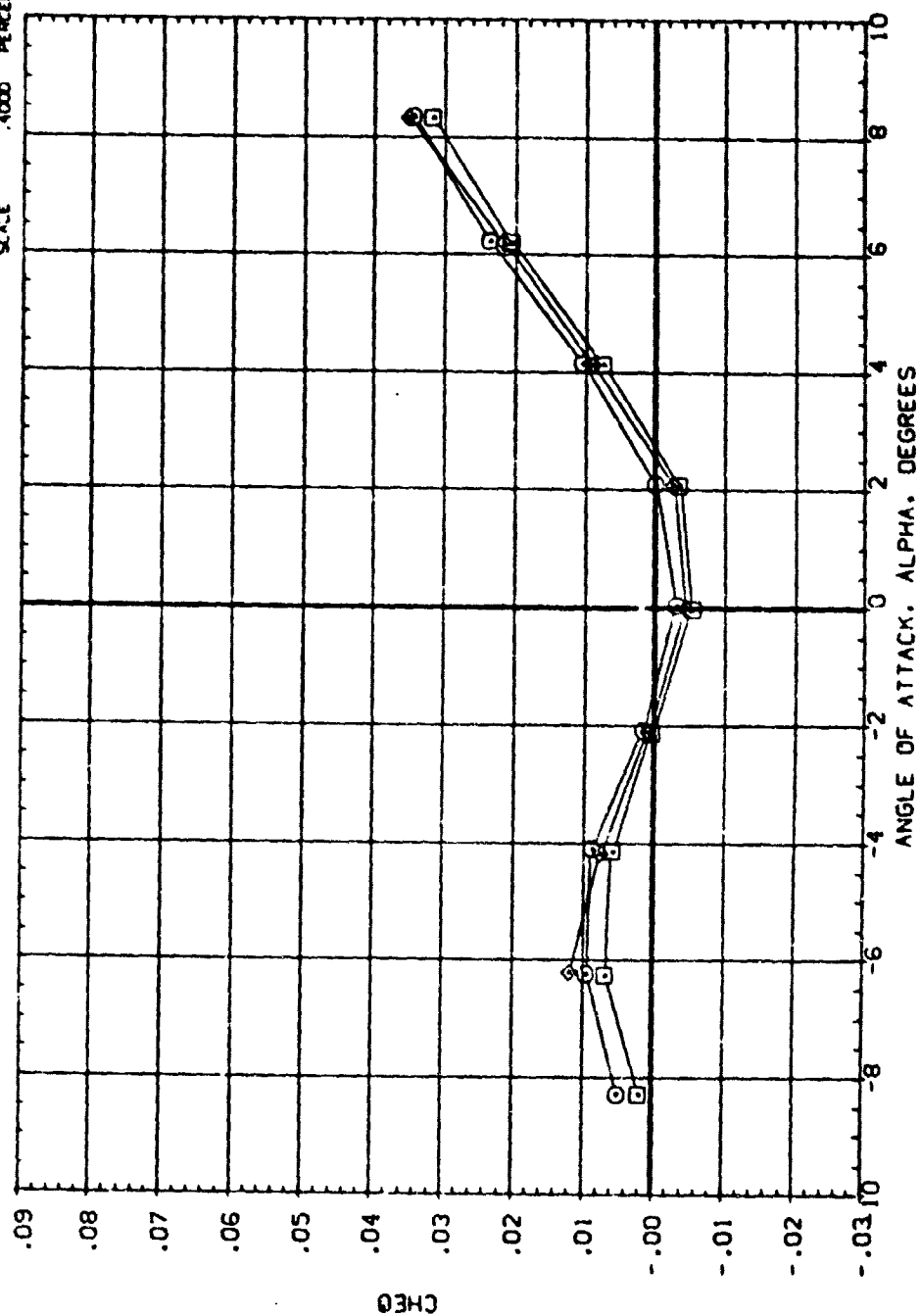
REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 2.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .0000 PERCENT



EFFECTS OF WING WAX

(A)MACH = .60

REFERENCE INFORMATION		
	5.1280	50. IN
SREF	5.1612	IN.
LREF	3.7470	IN.
BREF	2.7120	IN.
WREF	.0000	IN.
YREF	.0000	IN.
SCALE	.0000	PERCEN

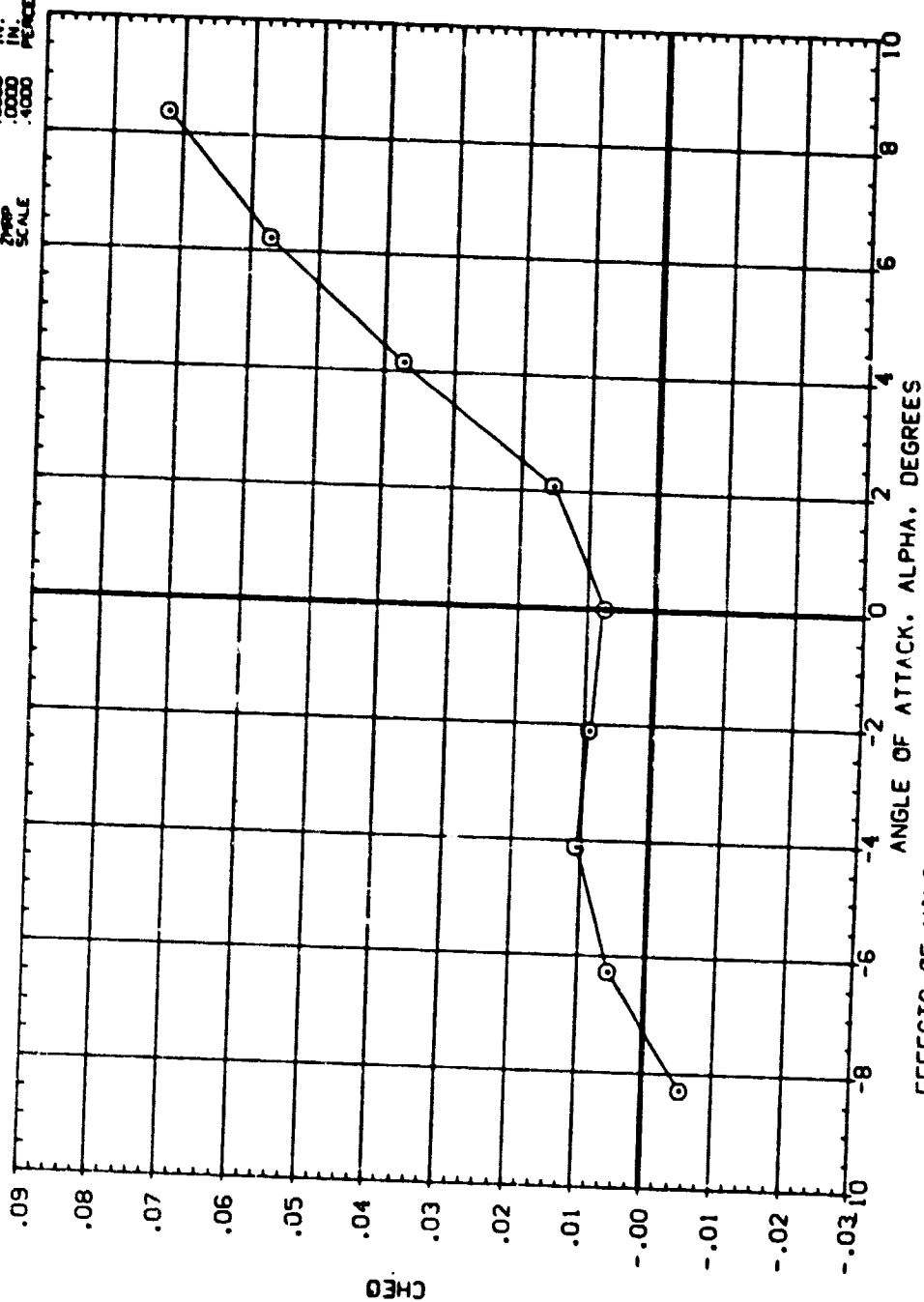


EFFECTS OF WING WAX
 XVM GNIH JO SL33F33

$$(B)_{MACH} = .90$$

DATA SET SYMBOL: 00
 CONFIGURATION DESCRIPTION: FA26, MSFC, TWT, 556, CONF 10, 00V2E2
 (FA26S1)
 (FA26S2)
 (FA26S4)
 DATA NOT AVAILABLE
 DATA NOT AVAILABLE

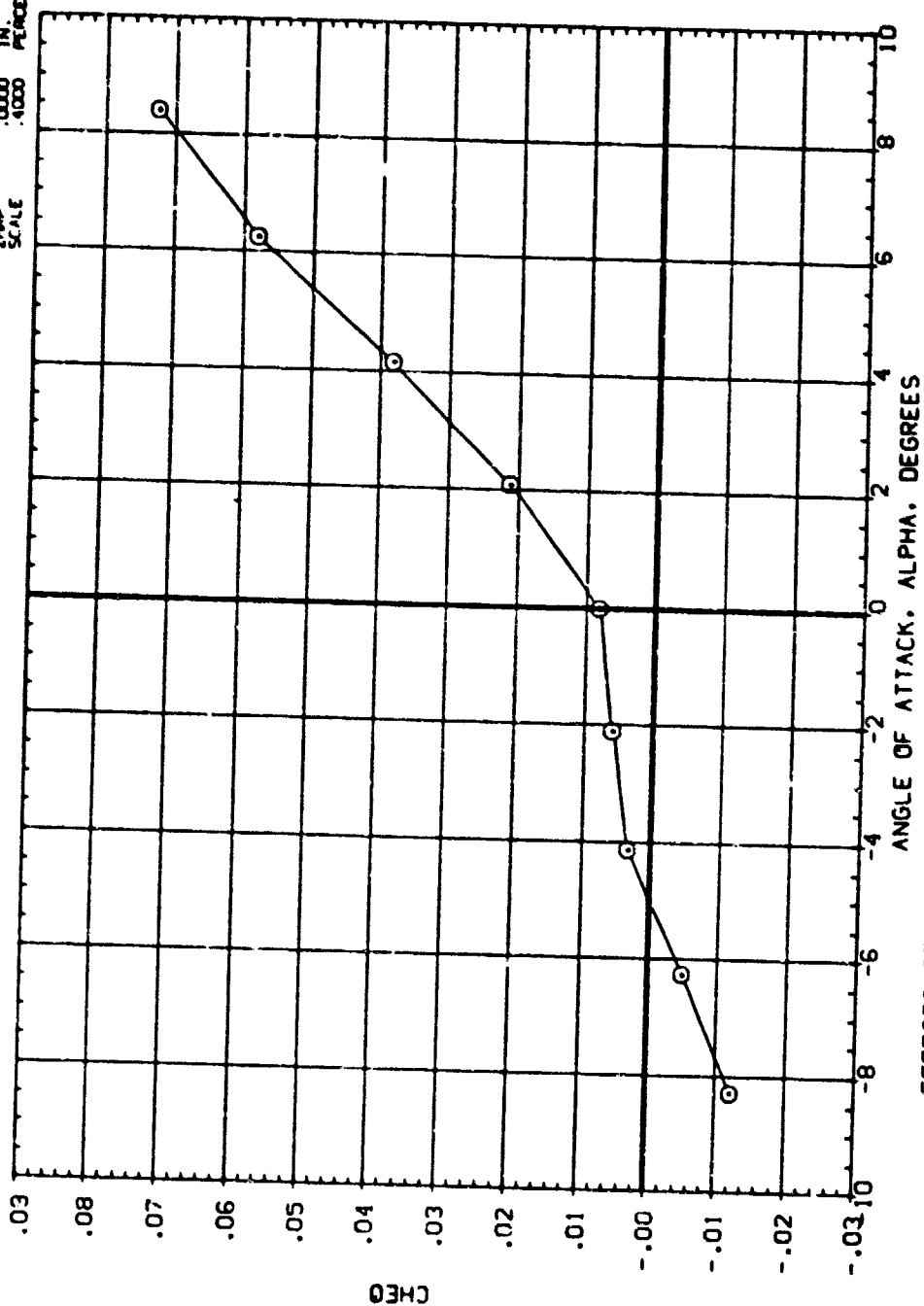
REFERENCE INFORMATION
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 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECTS OF WING MAX
 (C)MACH = 1.06

DATA SET SYMBOL: FA28. MSFC TWT 656. CONFIG. 02V2E2
 (FA2851) DATA NOT AVAILABLE
 (FA2852) DATA NOT AVAILABLE
 (FA2854) DATA NOT AVAILABLE

REFERENCE INFORMATION
 REF: 6.19.0 IN.
 LREF: 6.15.0 IN.
 BREF: 5.74.0 IN.
 WREF: 2.71.0 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .4000 PERCENT

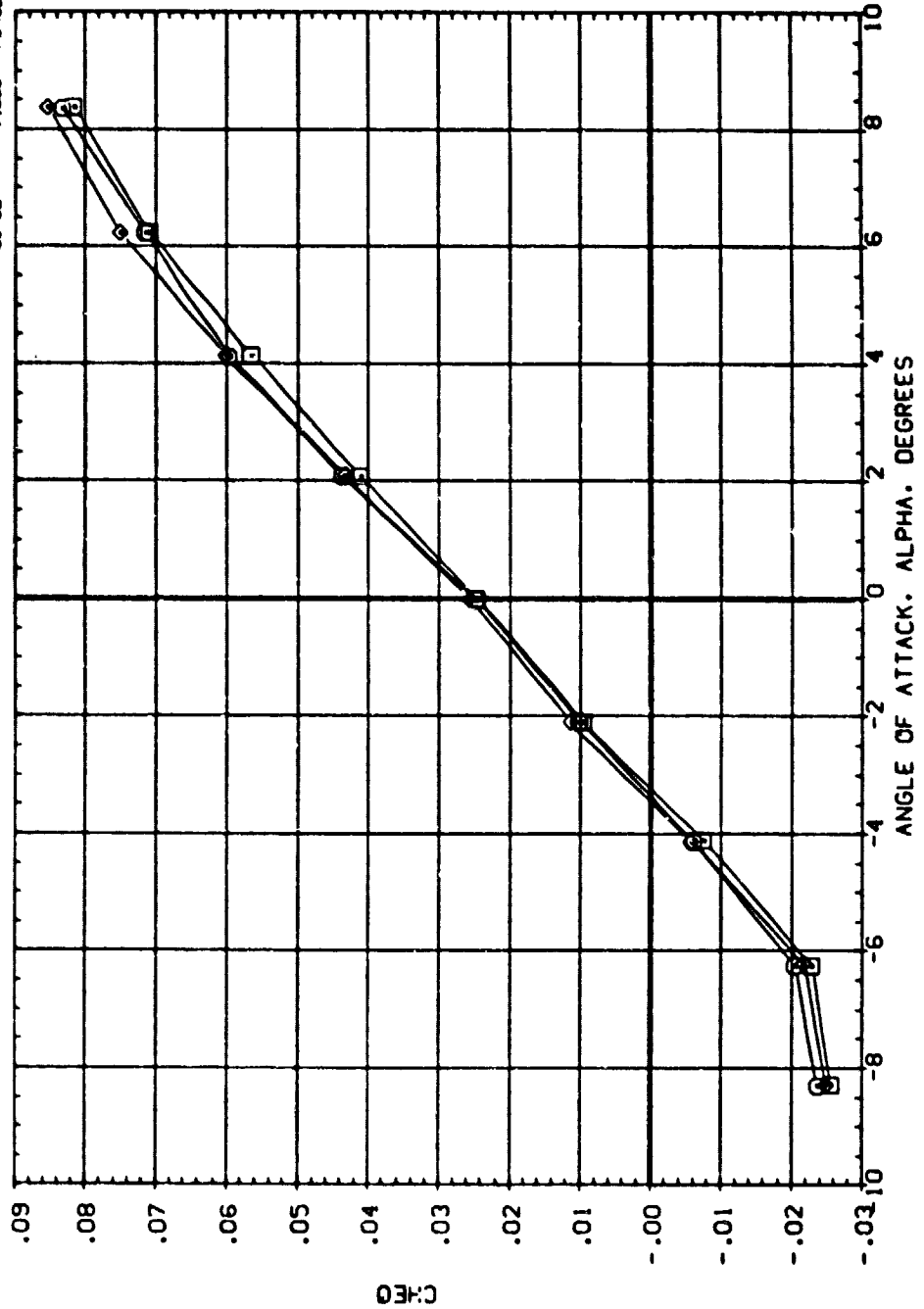


EFFECTS OF WING WAX

(O)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2801) 0 FA28. MSFC TUT 656. CONF 16. QWZ02 WING GAP WAX
 (FA2802) 0 FA28. MSFC TUT 656. CONF 16. QWZ02 WING GAP WAX
 (FA2804) 0 FA28. MSFC TUT 656. CONF 16. QWZ02 WING GAP WAX

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XPROP 2.7120 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

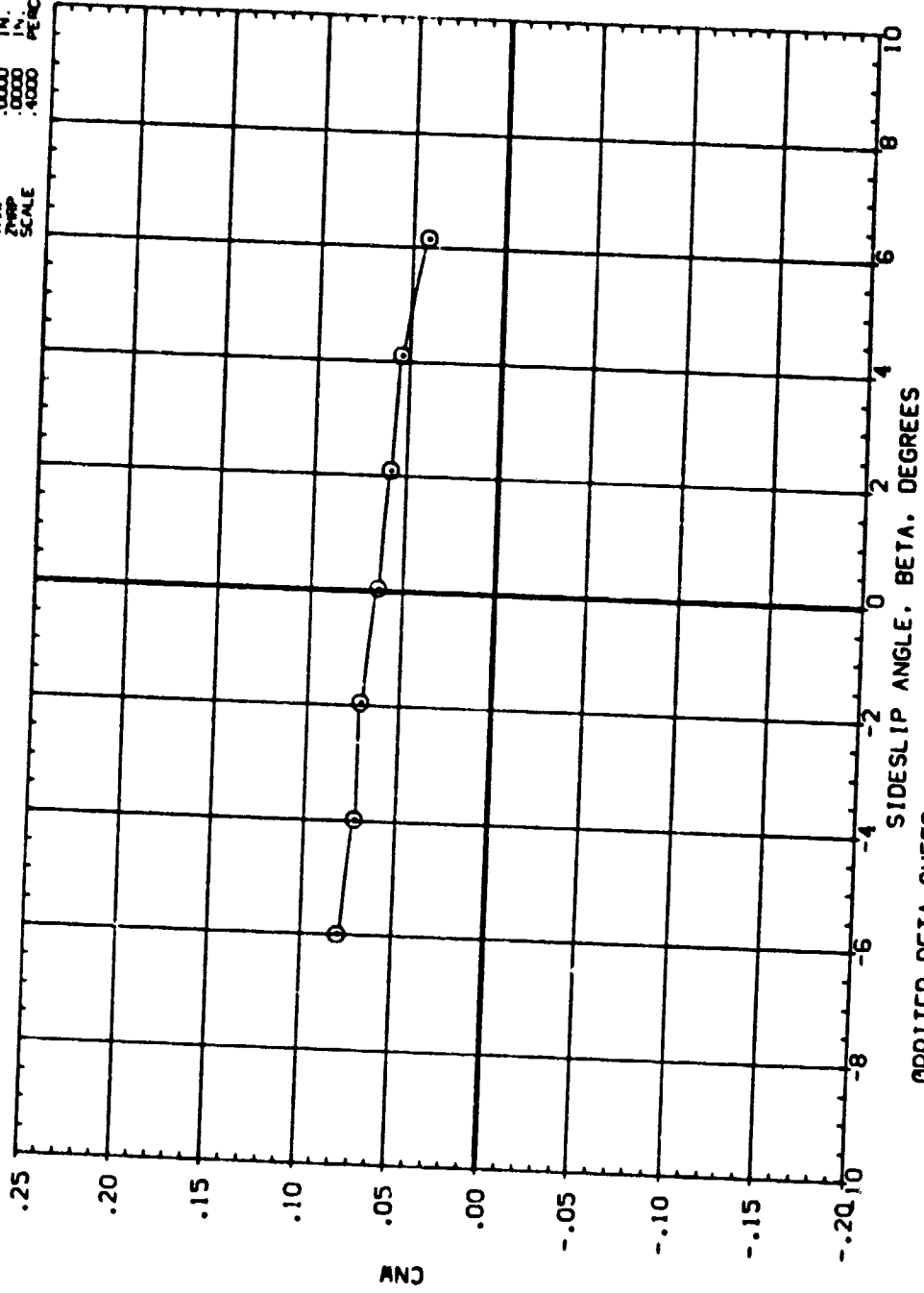


EFFECTS OF WING WAX

(E)MACH = 1.25

DATA SET SYMBOL: FA208. MSC 1V1 656. CONFIG. 02V2E2 VING GAP MAX

REFERENCE INFORMATION
 SREF 6.1980 IN
 LREF 5.1612 IN
 GREF 3.7470 IN
 YREF 2.7120 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

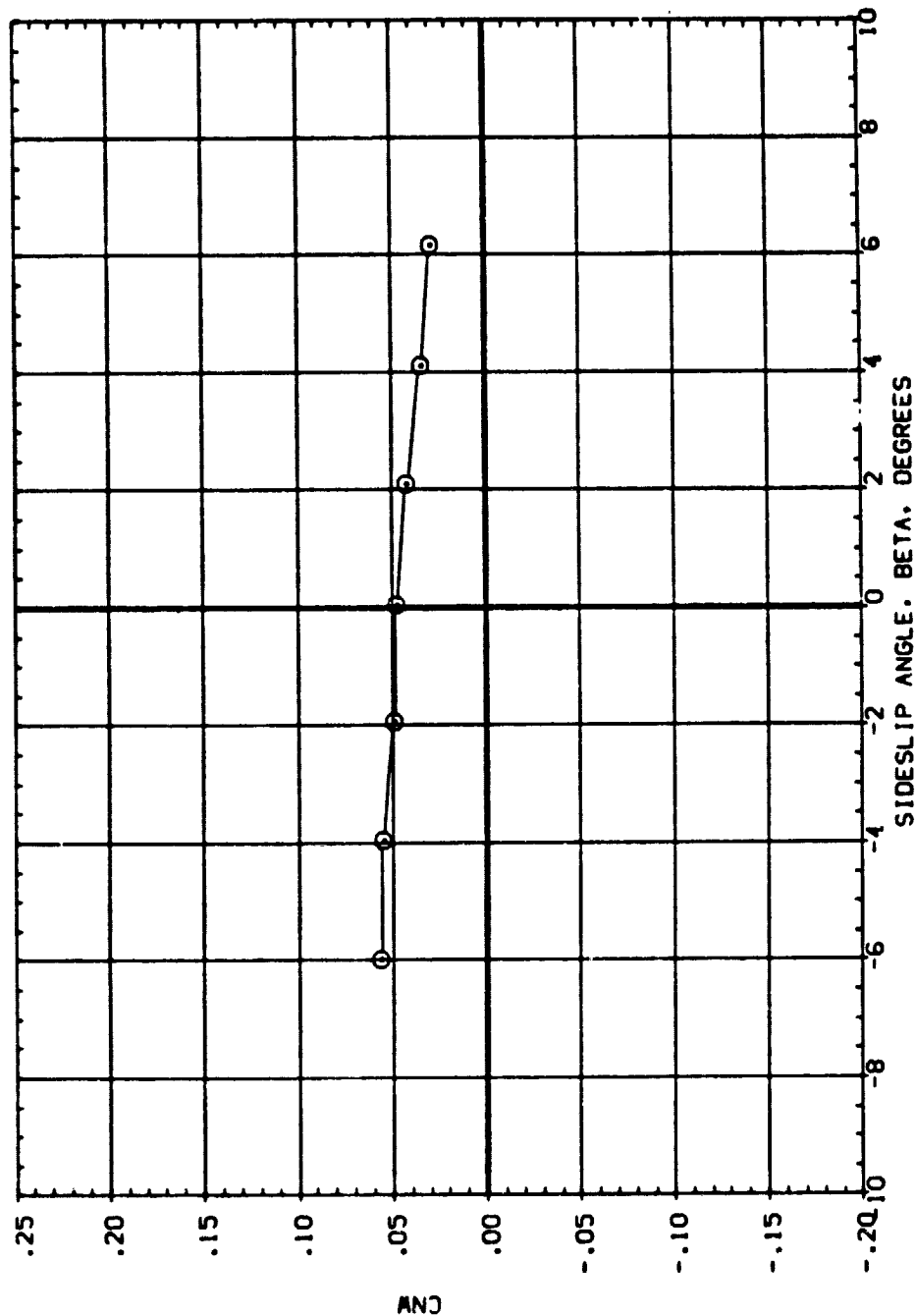


ORBITER BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2853) O FA28. MSFC TWT 656. CONF 16. 02N2E2 VING GAP MAX

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
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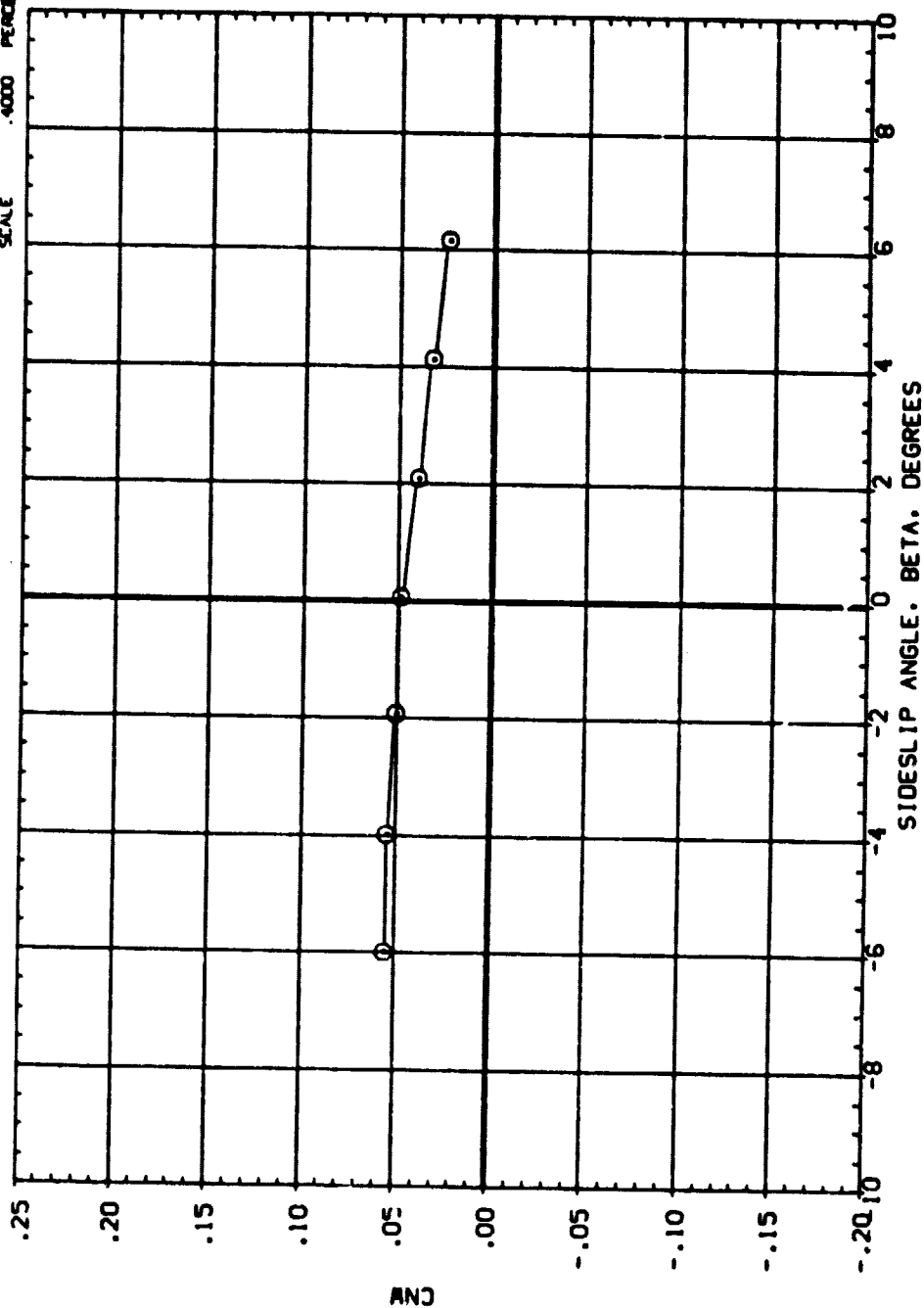


ORBITER BETA SWEEP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(FA2053) ○ FA20, MSC TWT 655, CONFIG. 02V2E2 WING GAP MAX

REFERENCE INFORMATION
SREF 6.1580 IN.
LREF 5.1612 IN.
BREF 3.7470 IN.
XREF 2.7120 IN.
YREF .0000 IN.
ZREF .0000 IN.
SCALE .0000 PERCENT



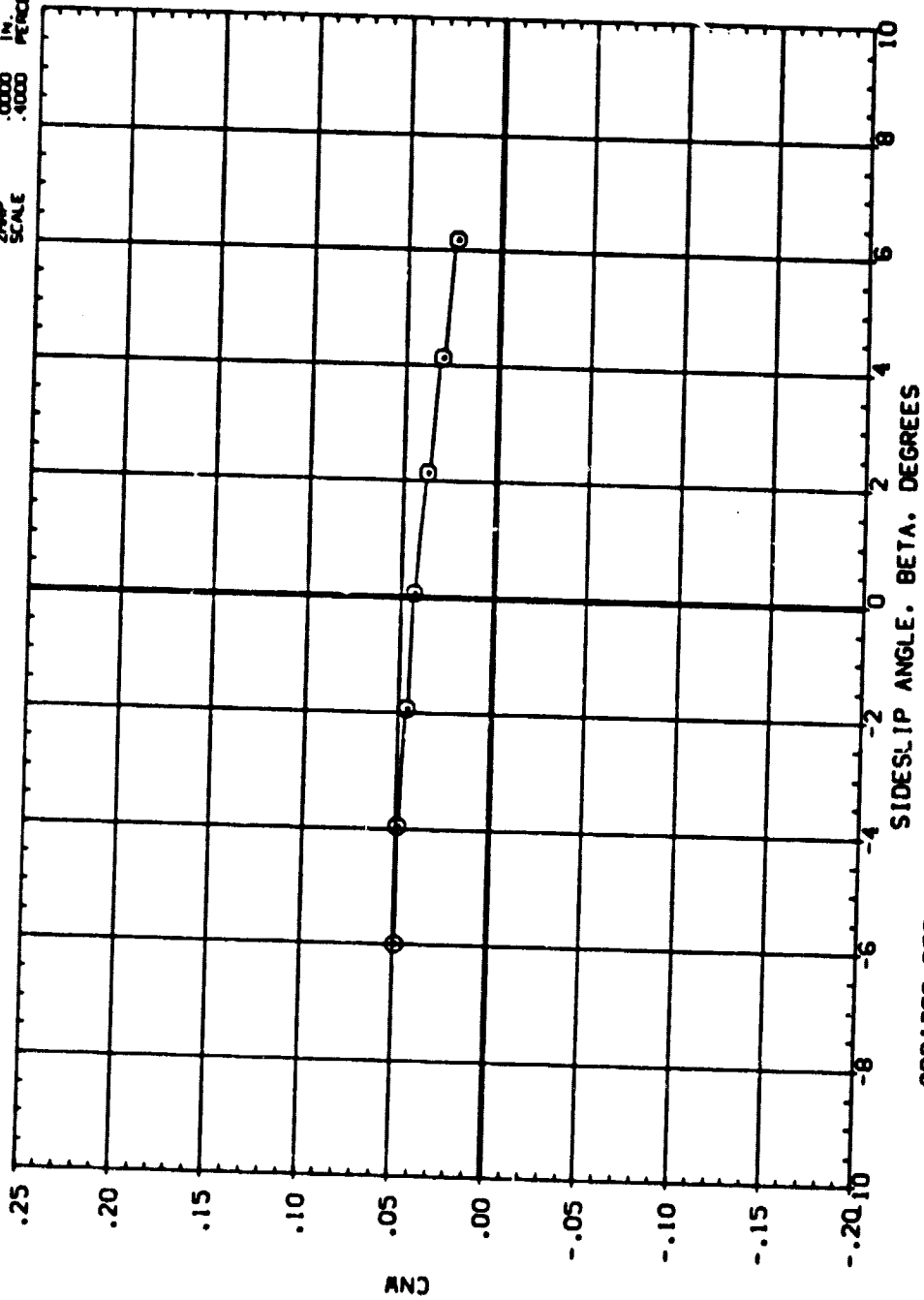
ORBITER BETA SWEEP

(C)MACH = 1.05

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DATA SET SYMBOL CONFIGURATION DESCRIPTION
(FA253) O FA28. MSFC TVT 636. CONFIG. GV232 VING GAP VAL

REFERENCE INFORMATION
SREF 6.1280 IN.
LREF 5.1512 IN.
BREF 3.7475 IN.
VREF 2.7120 IN.
WREF .0000 IN.
ZREF .0000 IN.
SCALE .4000 PERCENT

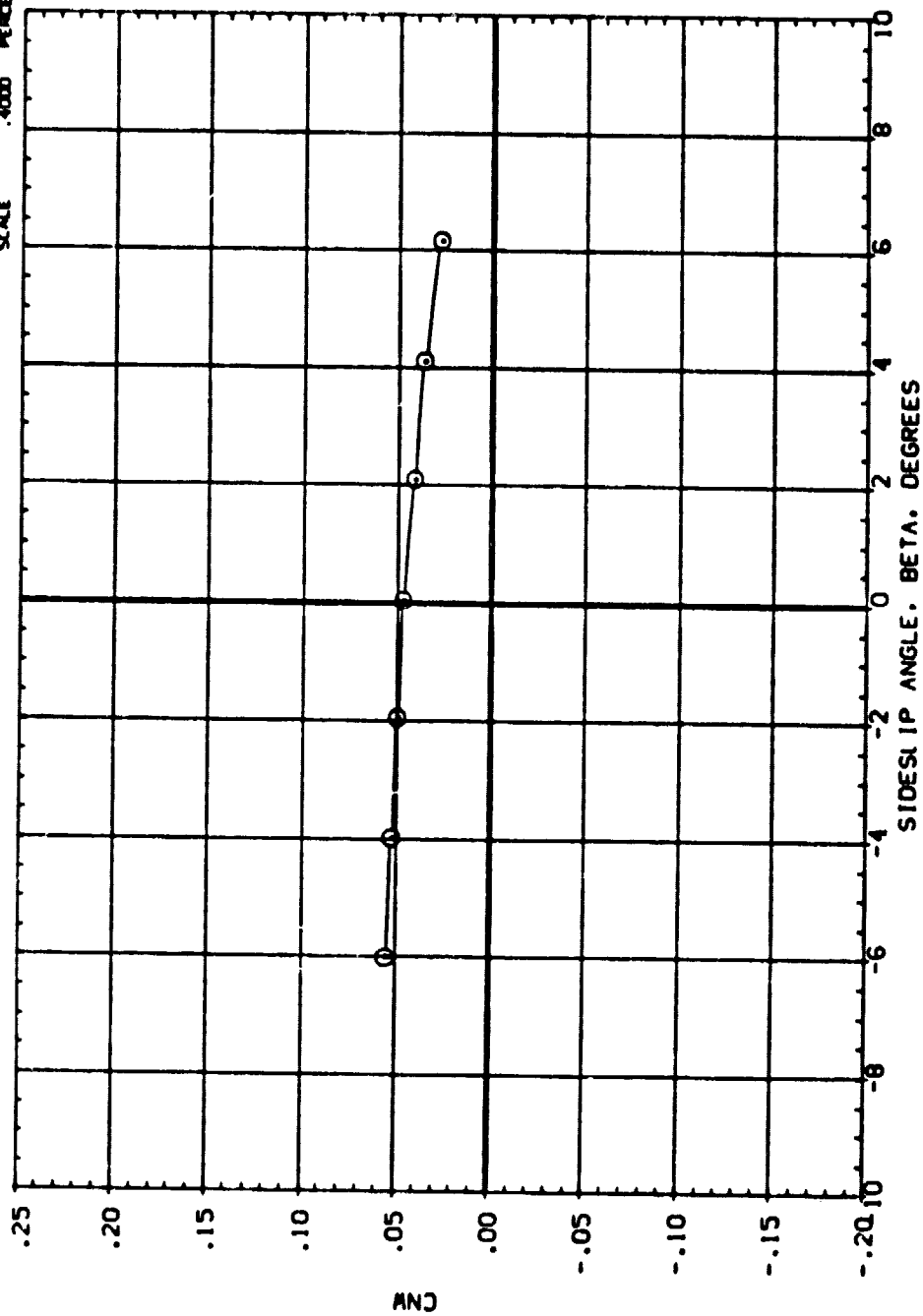


ORBITER BETA SWEEP

(O)MACH = 1.11

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2053) O FA20. MFC TWT 656. CONFIG. GEN2E2 VING GAP VAX

REFERENCE INFORMATION
 SREF 6.1800 SO. IN
 LREF 3.1612 IN.
 MREF 2.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERIOD

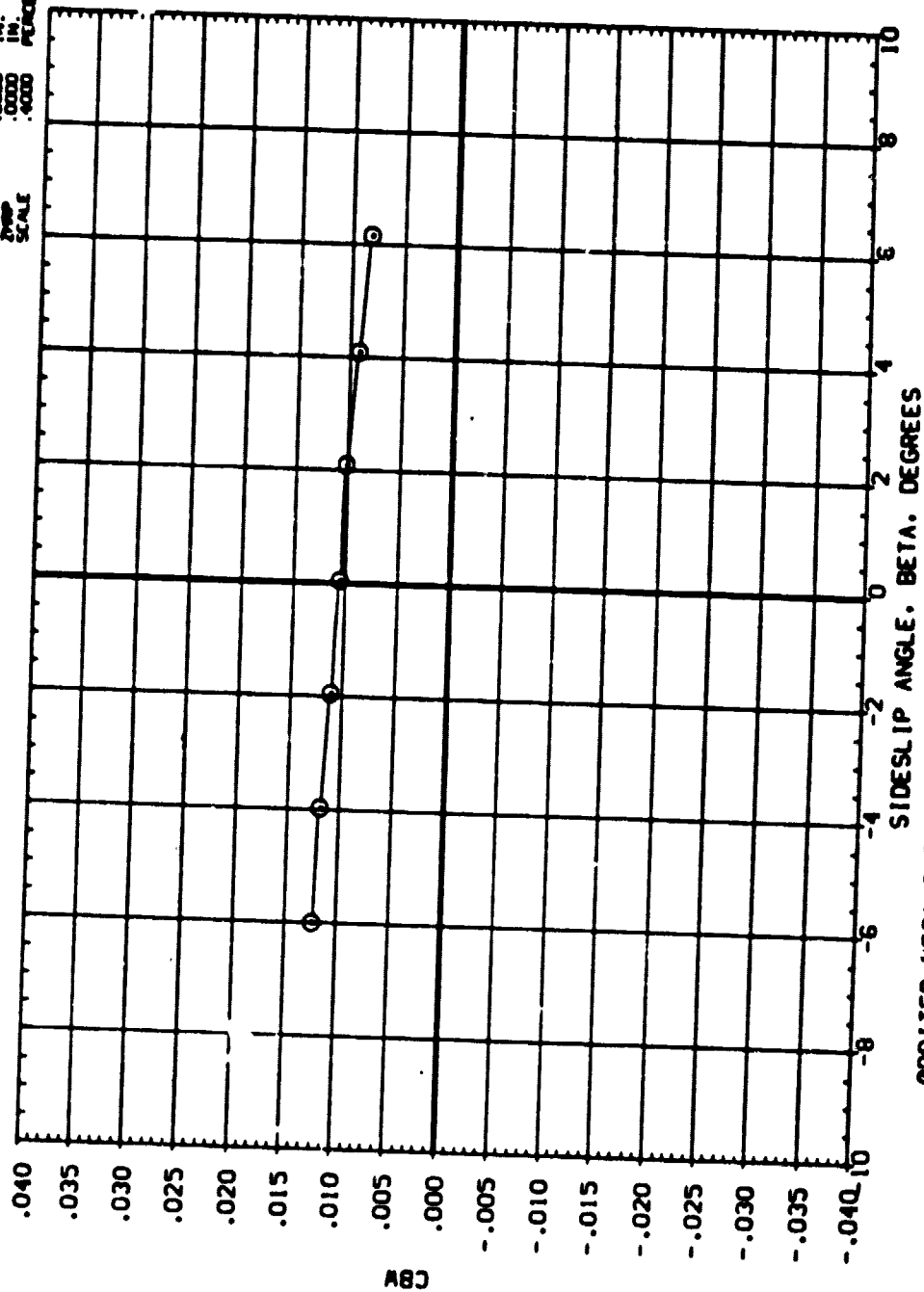


ORBITER BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(FA2853) O FA28. MSEC TOT 656. CONF10. ORZ22 VING GAP MAX

REFERENCE INFORMATION
SPT 6.1580 IN.
LPT 5.1612 IN.
SPT 3.7470 IN.
LPT 2.7140 IN.
MSEC .0000 IN.
SCALE .0000 IN.
PUNCH

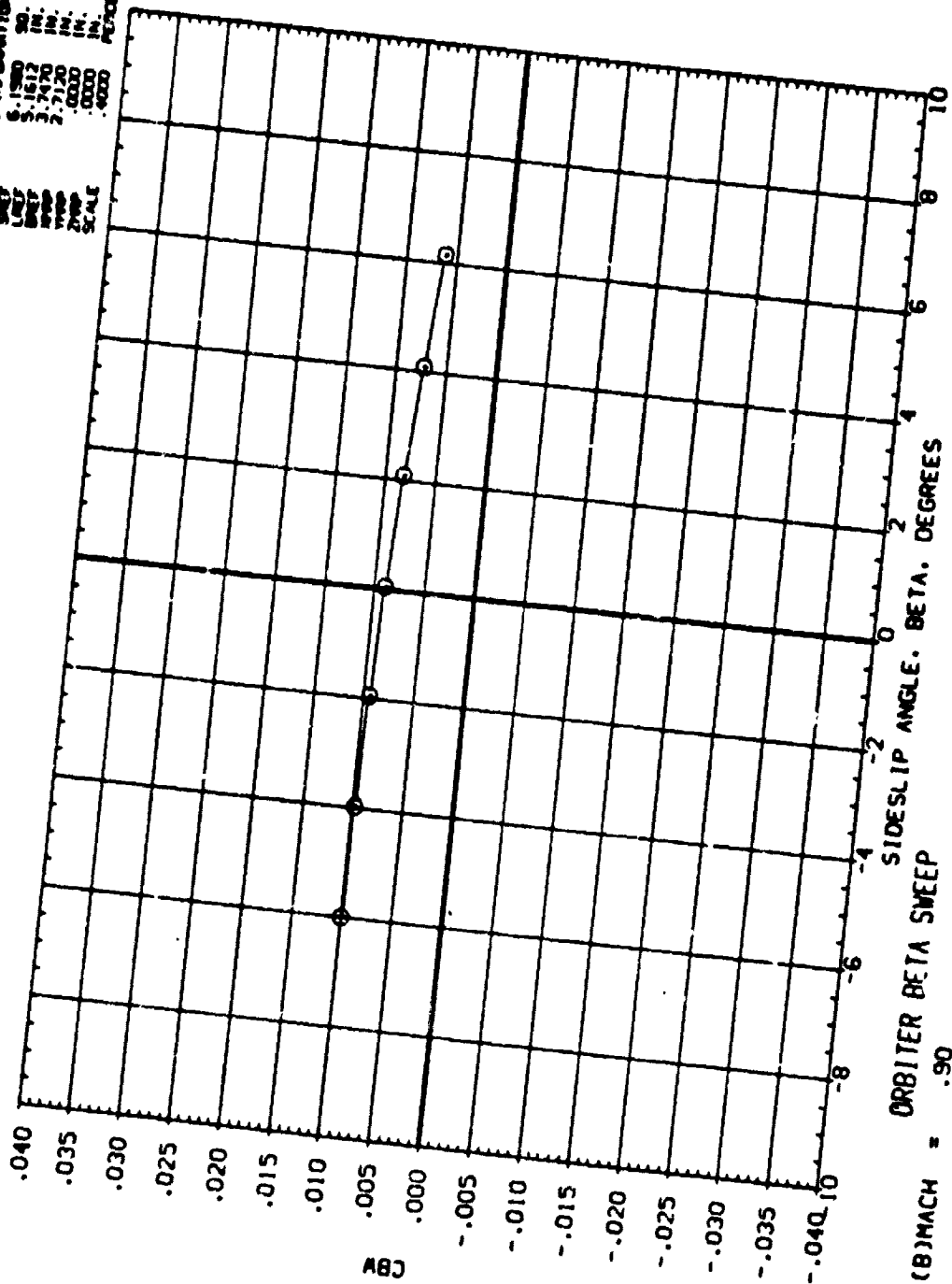


ORBITER BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2032) O FA20- WSC TVT 636. CONF 10, SIZE2 KING GAP VAL

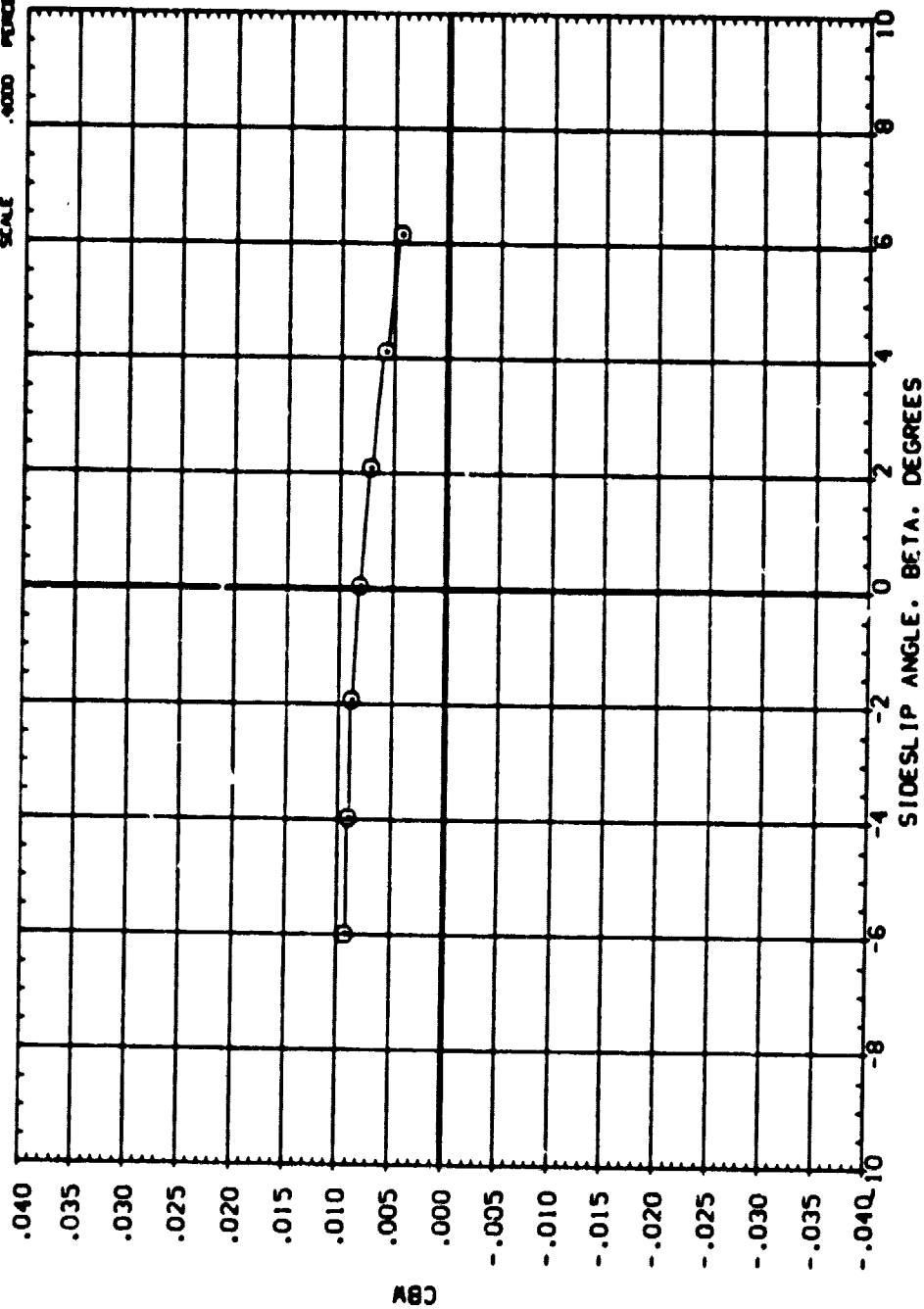
REFERENCE INFORMATION
 REF 5.1280 20. IN
 LAMP 5.1612 20. IN
 WAVE 3.7412 20. IN
 WAVE 2.7120 20. IN
 WAVE .0000 20. IN
 SCALE .0000 20. IN
 SCALE .0000 20. IN



ORBITER BETA SWEEP
 (B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2053) ○ FA20. HSTC TWT 856. CONF 16. G0V22 2ING GAP MAX

REFERENCE INFORMATION
 SET 6.1580 50 IN
 LREF 5.1612 10 IN
 GREF 3.2470 10 IN
 TREF 2.7120 10 IN
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 TREF .0000 10 IN
 SCALE .0000 PERIOD

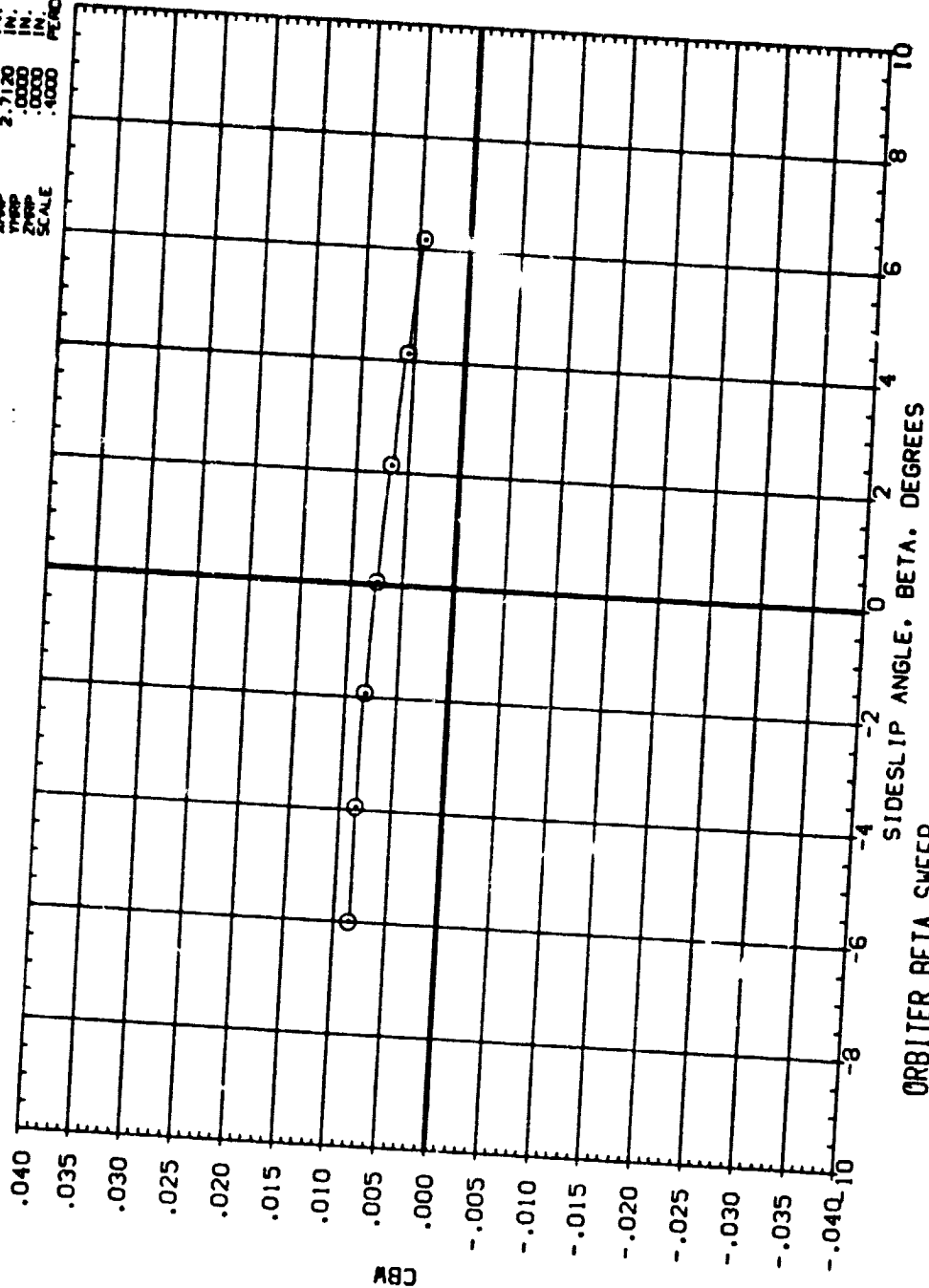


ORBITER BETA SWEEP

(C)MACH = 1.05

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
(FA2853) ○ FA28. MSC TVT 656. CONF 16. 02V2E2 VING GAP VAX

REFERENCE INFORMATION
SHEET 6.1980 50. IN
LIFT 3.1612 IN.
WING 2.7470 IN.
YPROP .0000 IN.
ZPROP .0000 IN.
SCALE .4000 FEET/IN

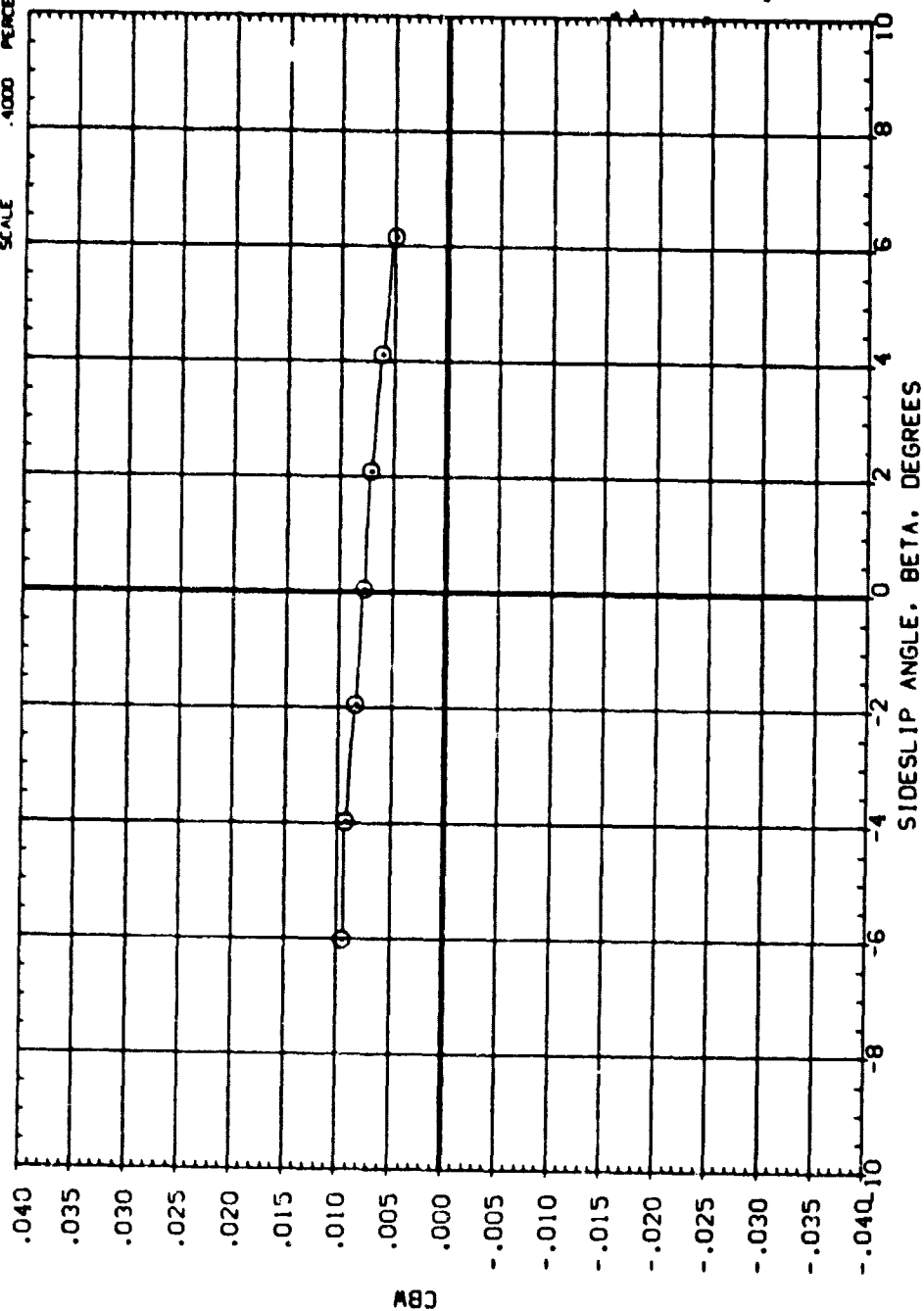


ORBITER BETA SWEEP
(D)MACH = 1.11

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DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2853) ○ FA28. MSC TVT 656. CONF 10. GEN22 VING GAP VAL

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

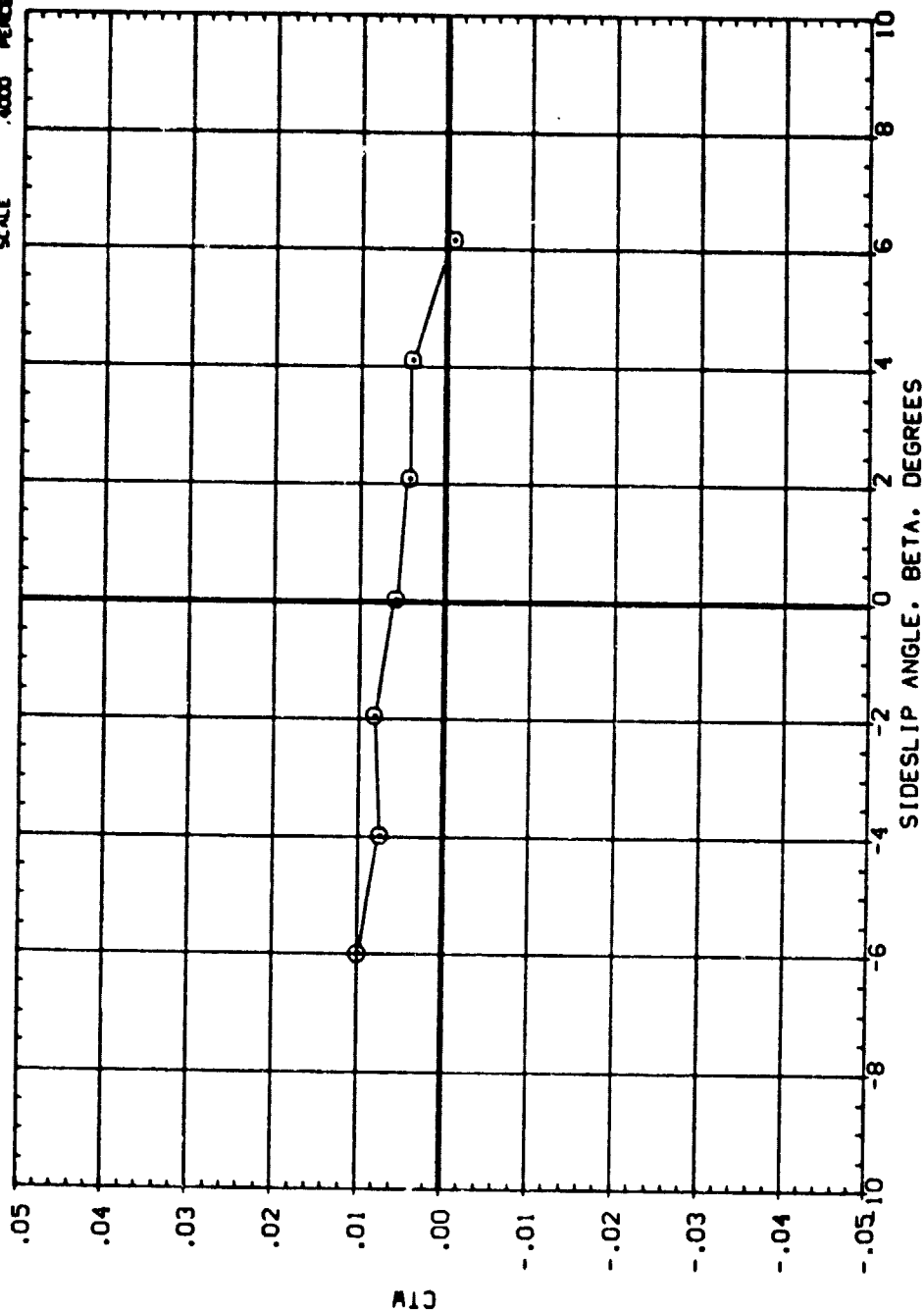


ORBITER BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
(FA2053) O FA20. MFC TUT 656. CONFIG. 02VZ2 VING GAP MAX

REFERENCE INFORMATION
SREF 6.1580 90. IN
LREF 5.1612 IN.
BREF 3.7470 IN.
APREF 2.7120 IN.
TREF .0000 IN.
TREF .0000 IN.
SCALE .0000 PERCENT

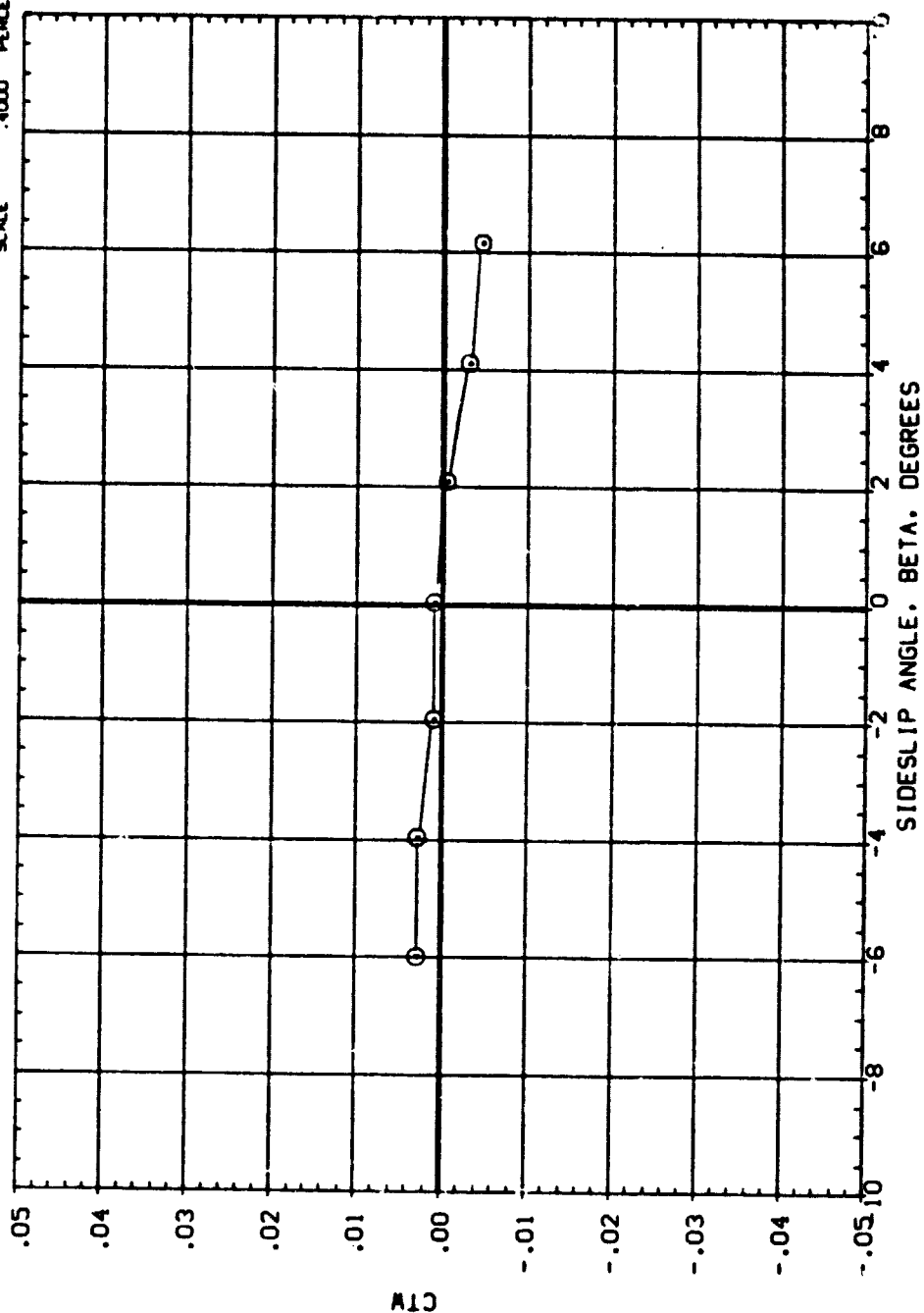


ORBITER BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL: ○ FA28. MSFC TVT 656. CONFIG. 02V2E2 VING GAP VAX

REFERENCE INFORMATION
 SREF 6.1360 SQ. IN.
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 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

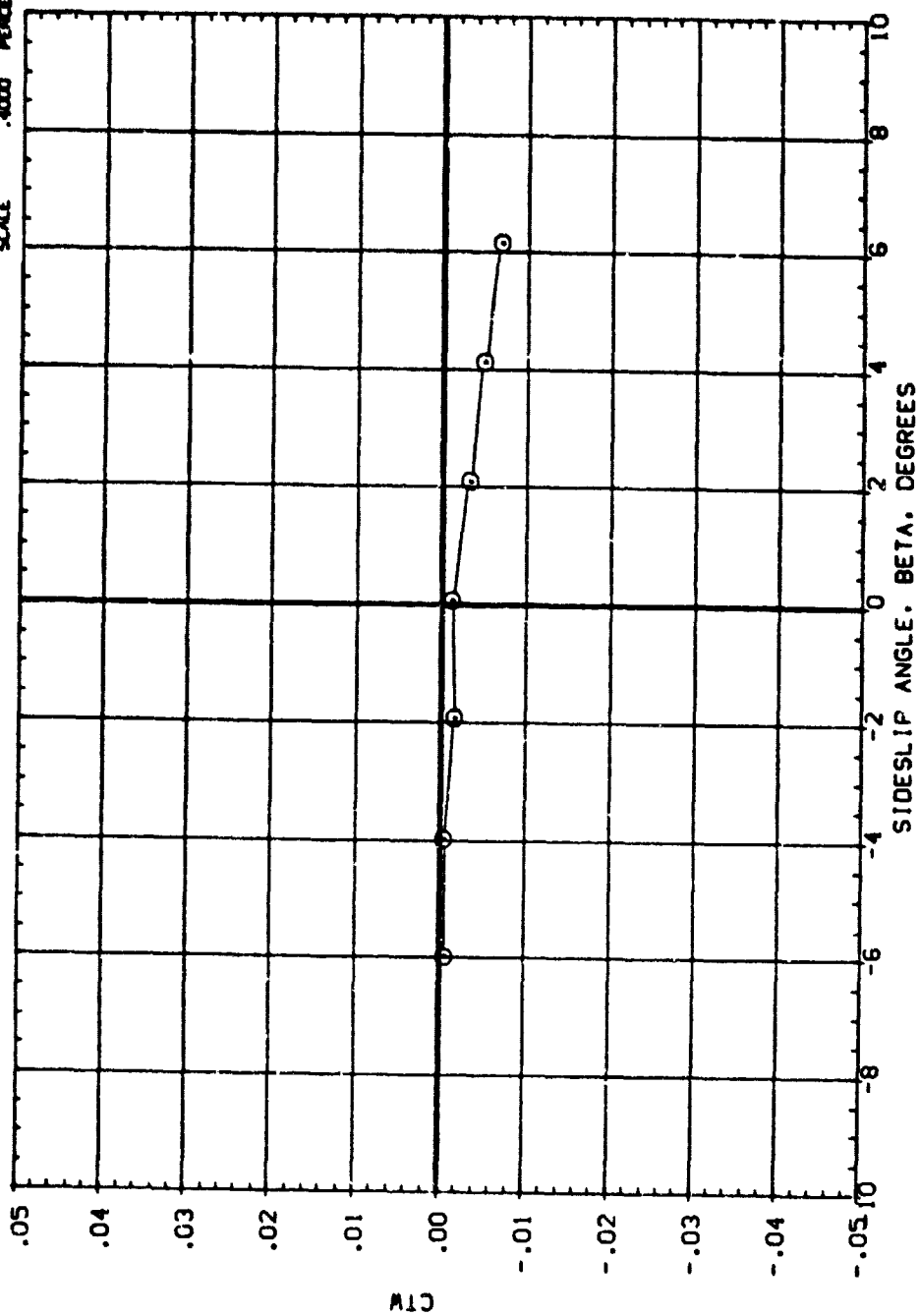


ORBITER BETA SWEEP

(B)MACH = .90

DATA SET SYMBOL: O CONFIGURATION DESCRIPTION: FA28, MSFC TVT 856, CONF 10, ORV2E2 VING GAP VAL

REFERENCE INFORMATION
 SREF 6.1280 IN.
 LREF 5.1612 IN.
 MREF 3.7470 IN.
 VREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

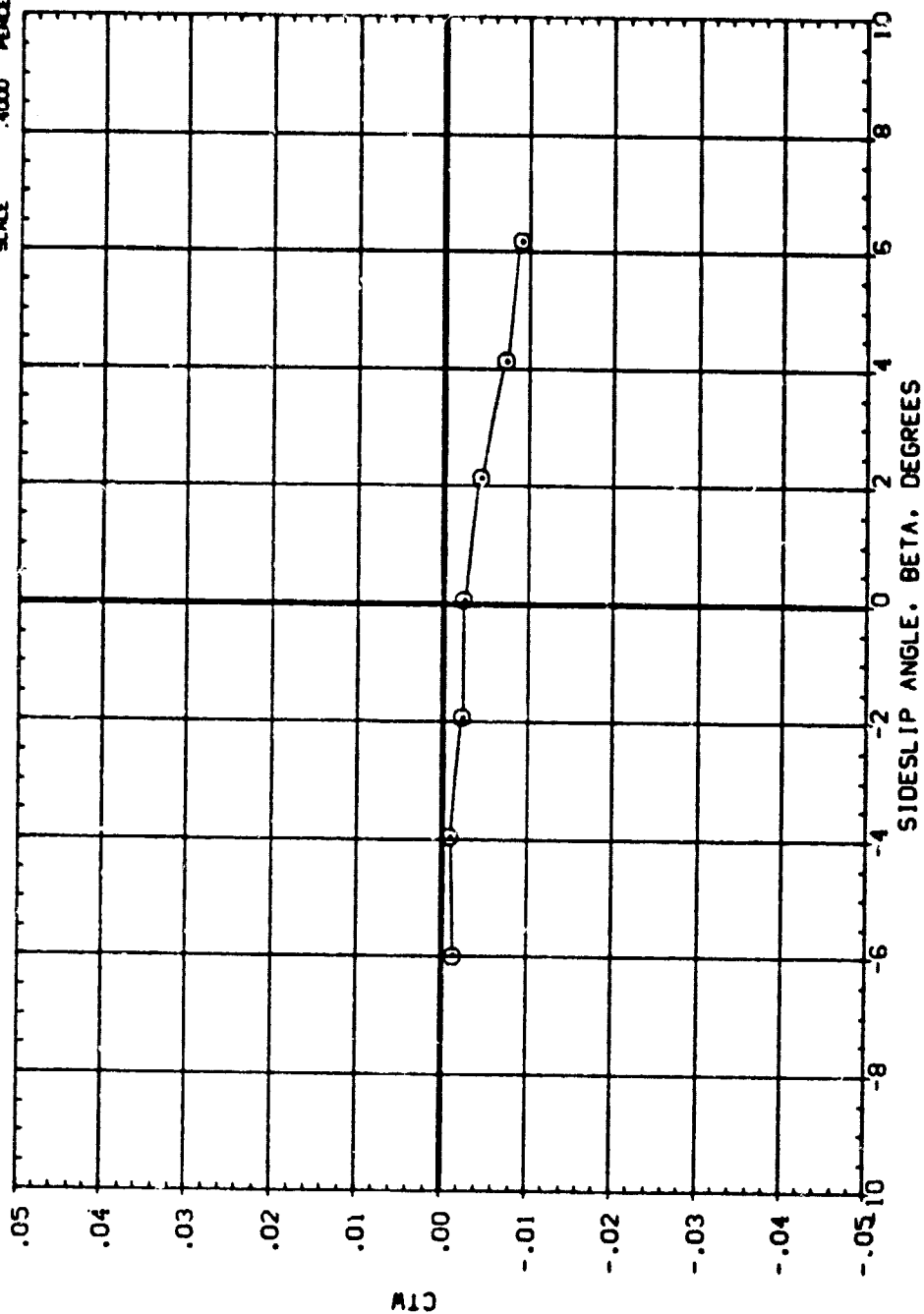


ORBITER BETA SWEEP

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(FA3853) O FA29, H57C TV" 655, CONFIG. 0292E2 WING GAP MAX

REFERENCE INFORMATION
SREF 5.1280 SQ. IN
LREF 5.1612 IN.
BREF 3.7470 IN.
XREF 2.7120 IN.
YREF .0000 IN.
ZREF .0000 IN.
SCALE .4000 PERIOD

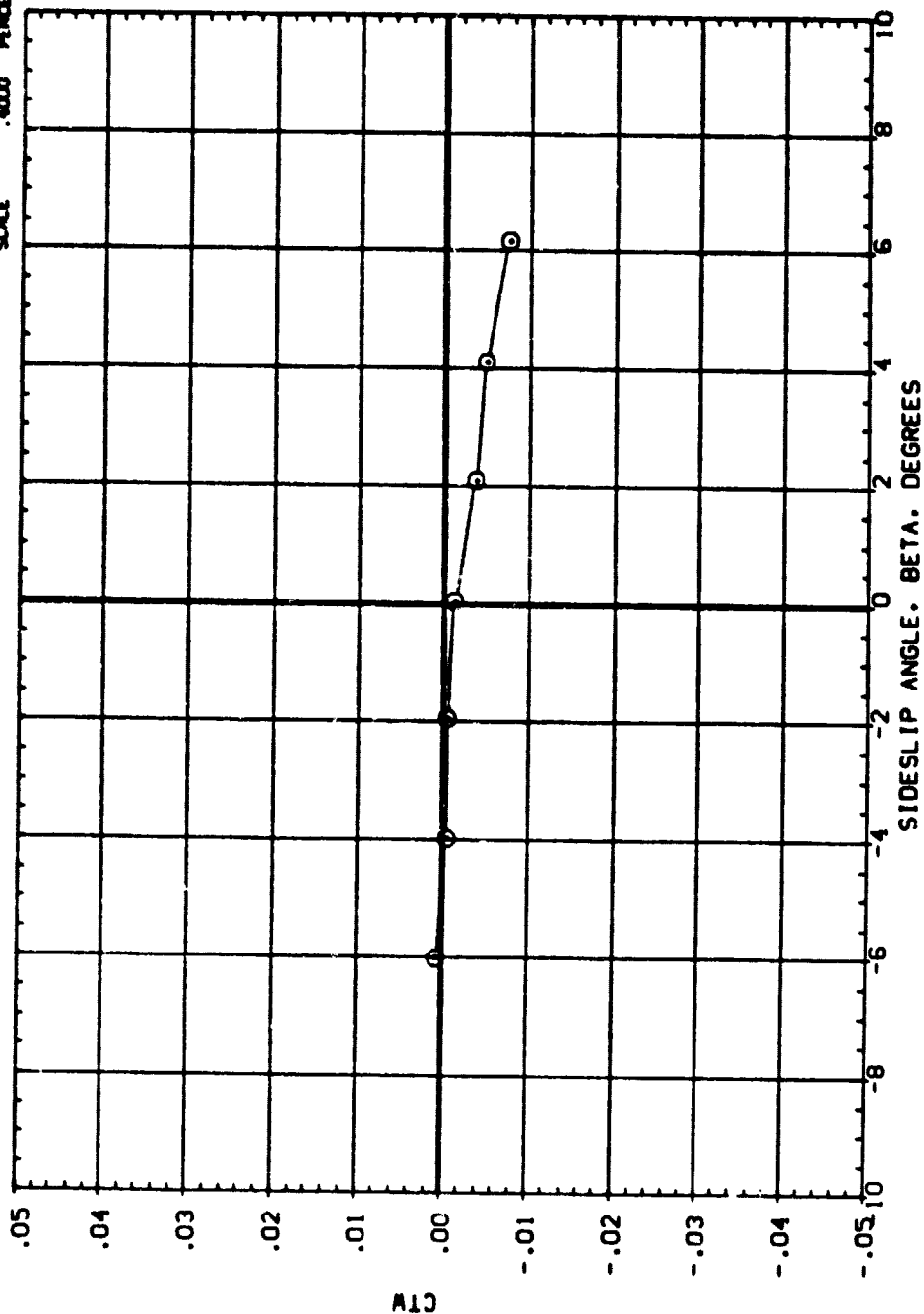


ORBITER BETA SWEEP

(D)MACH = 1.11

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2053) O FA20. MSFC TVT 656. CONFIG. 0202E2 VING GAP MAX

REFERENCE INFORMATION
 SWAY 6.1980 IN.
 LIFT 5.1612 IN.
 LIFT 2.7470 IN.
 SWAY 2.7120 IN.
 SWAY .0070 IN.
 SCALE .0000 PERCENT

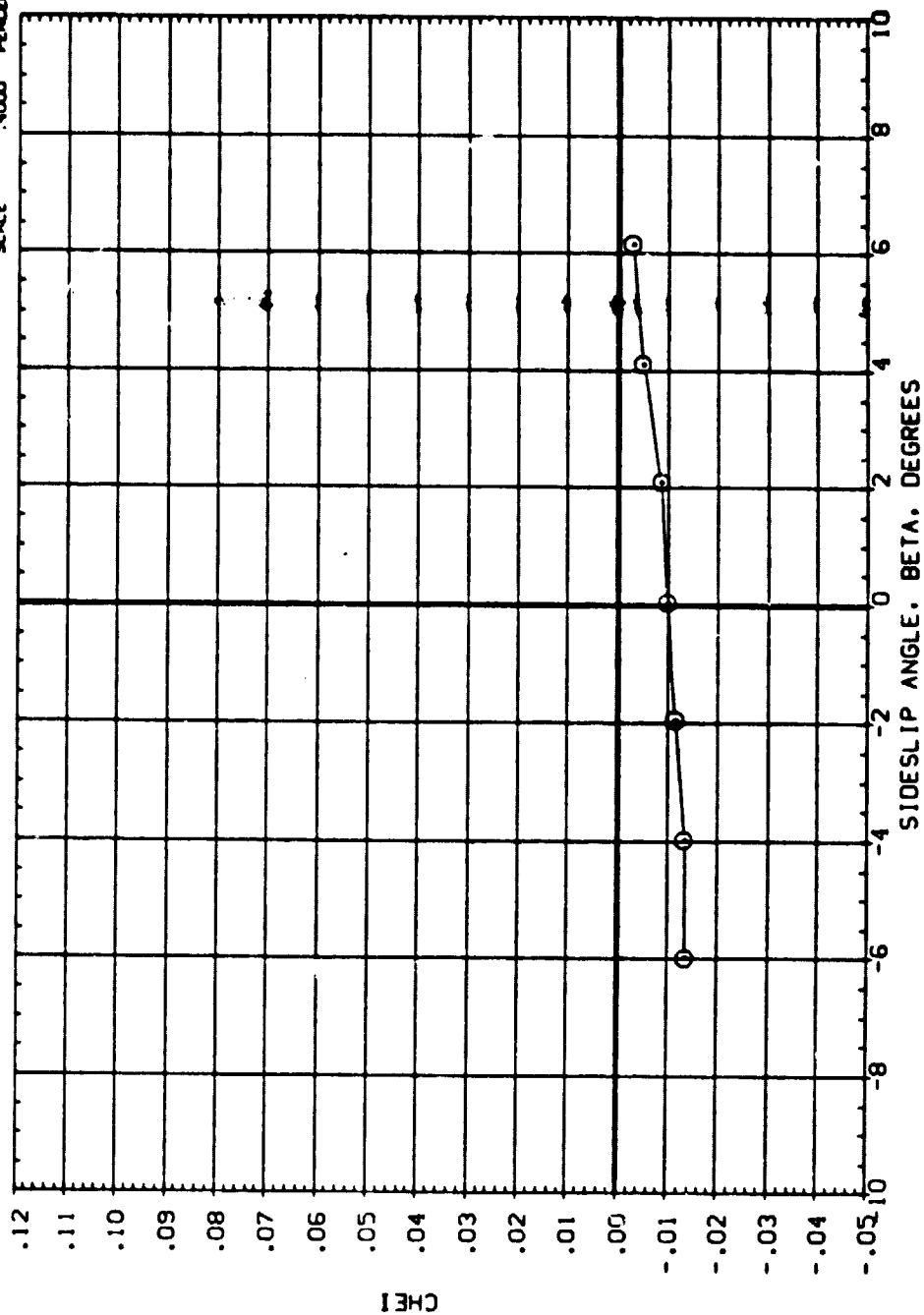


ORBITER BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(FA2053) O FA20. MSFC TWT 656. CONFIG. CONVE2 VING GAP MAX

REFERENCE INFORMATION
SHEET 6.1800 SQ. IN.
LINE 1.612 IN.
SPR 2.7470 IN.
VPROP .0000 IN.
ZPROP .0000 IN.
SCALE 4000 PERCENT

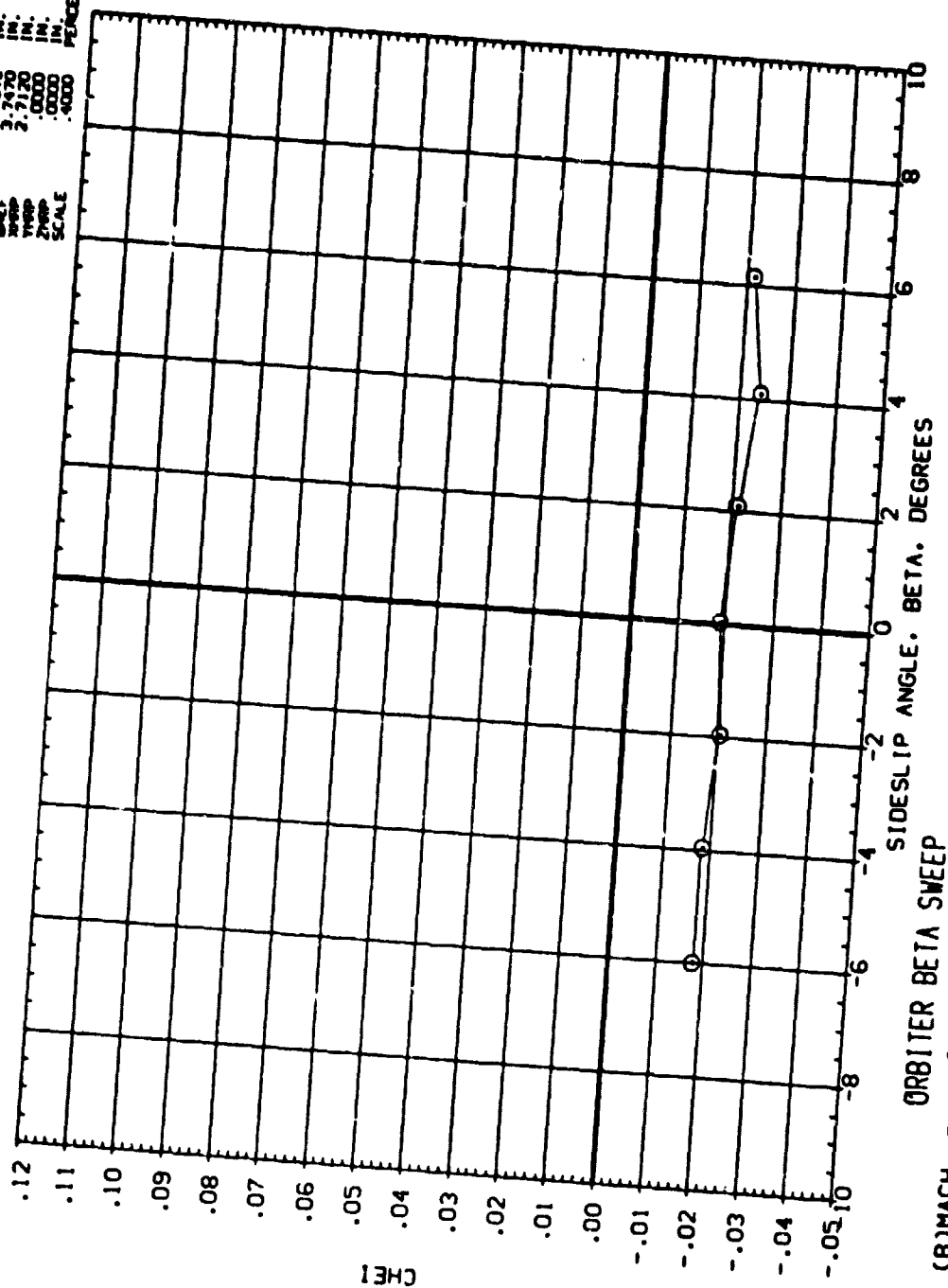


ORBITER BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
(FA2853) ○ FA28, H5FC TVT 656, CONFIG. 02V2E2 VING GAP MAX

REFERENCE INFORMATION
SHEET 6-1380 50 IN
LINE 5-1612 IN
SHEET 3-7470 IN
VING 2-7120 IN
ZAMP .0000 IN
SCALE .0000 IN
PEACH



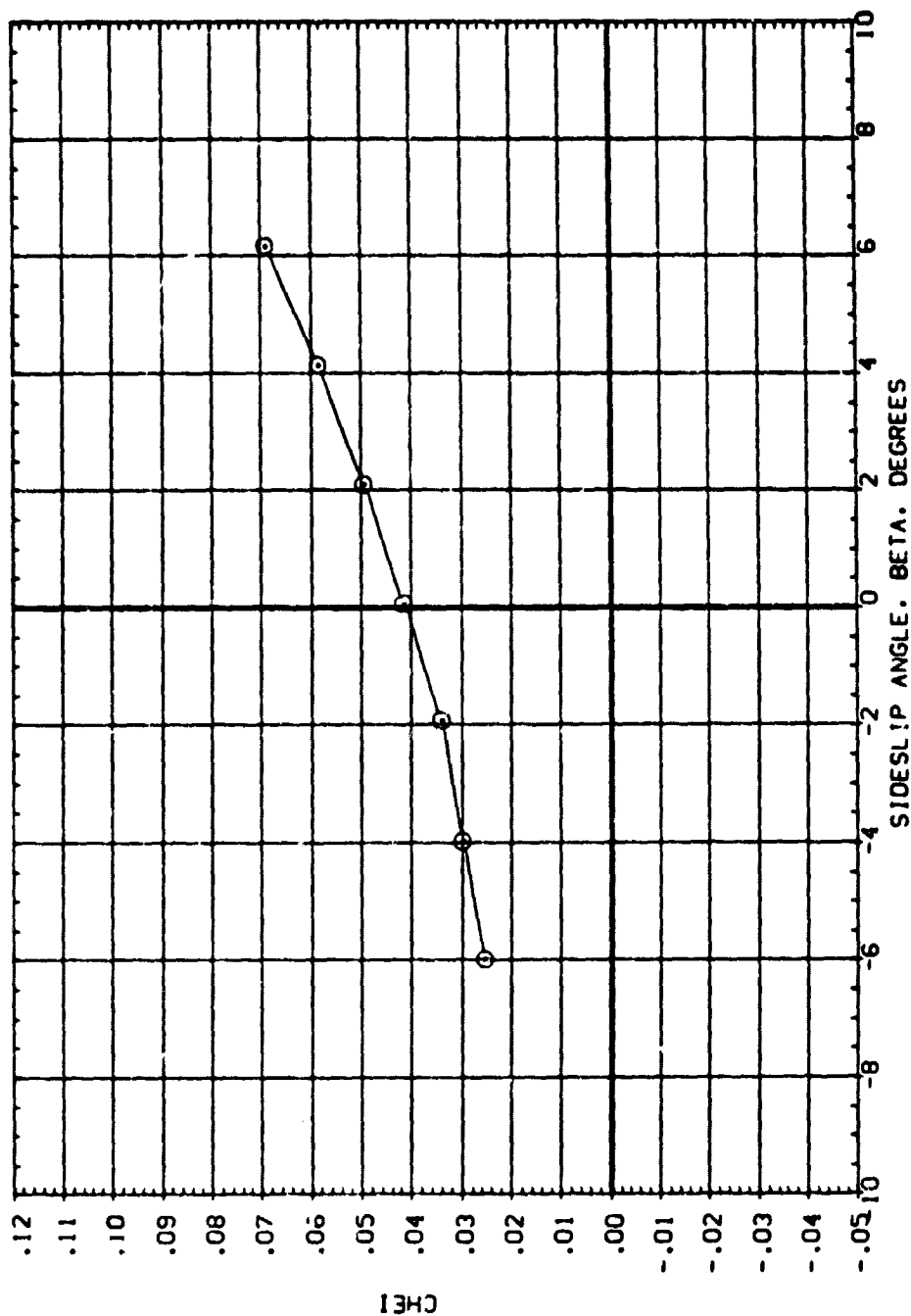
ORBITER BETA SWEEP

(B)MACH = .90

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DATA SET SYMBOL. CONFIGURATION DESCRIPTION
(FA2053) O FA20. MSC TWT 656. CONFIG. ORVZ2 VING GAP VAN

GEOMETRY INFORMATION
SREF 6.1580 IN
LREF 5.1612 IN
BREF 3.2470 IN
XREF 2.7120 IN
YREF .0000 IN
ZREF .0000 IN
SCALE .4000 PERCENT

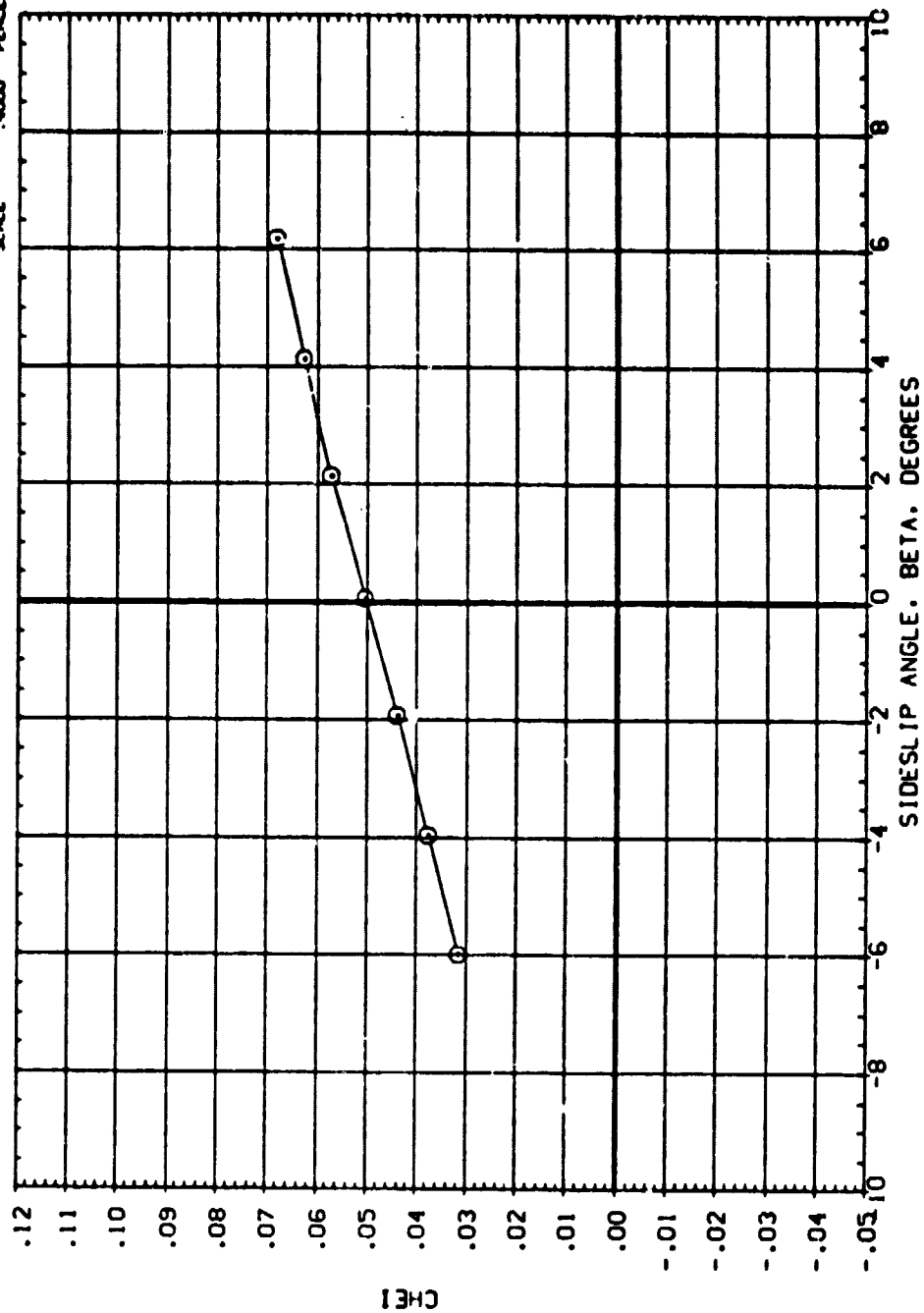


ORBITER BETA SWEEP

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2853) ○ FA28. W5FC TWT 656. CONFIG. 00V2E2 VING GAP VAX

REFERENCE INFORMATION
 SHEP 6.1580 IN
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 BREF 3.7470 IN
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 YBPB .0000 IN
 ZBPB .0000 IN
 SCALE .4000 PERCENT

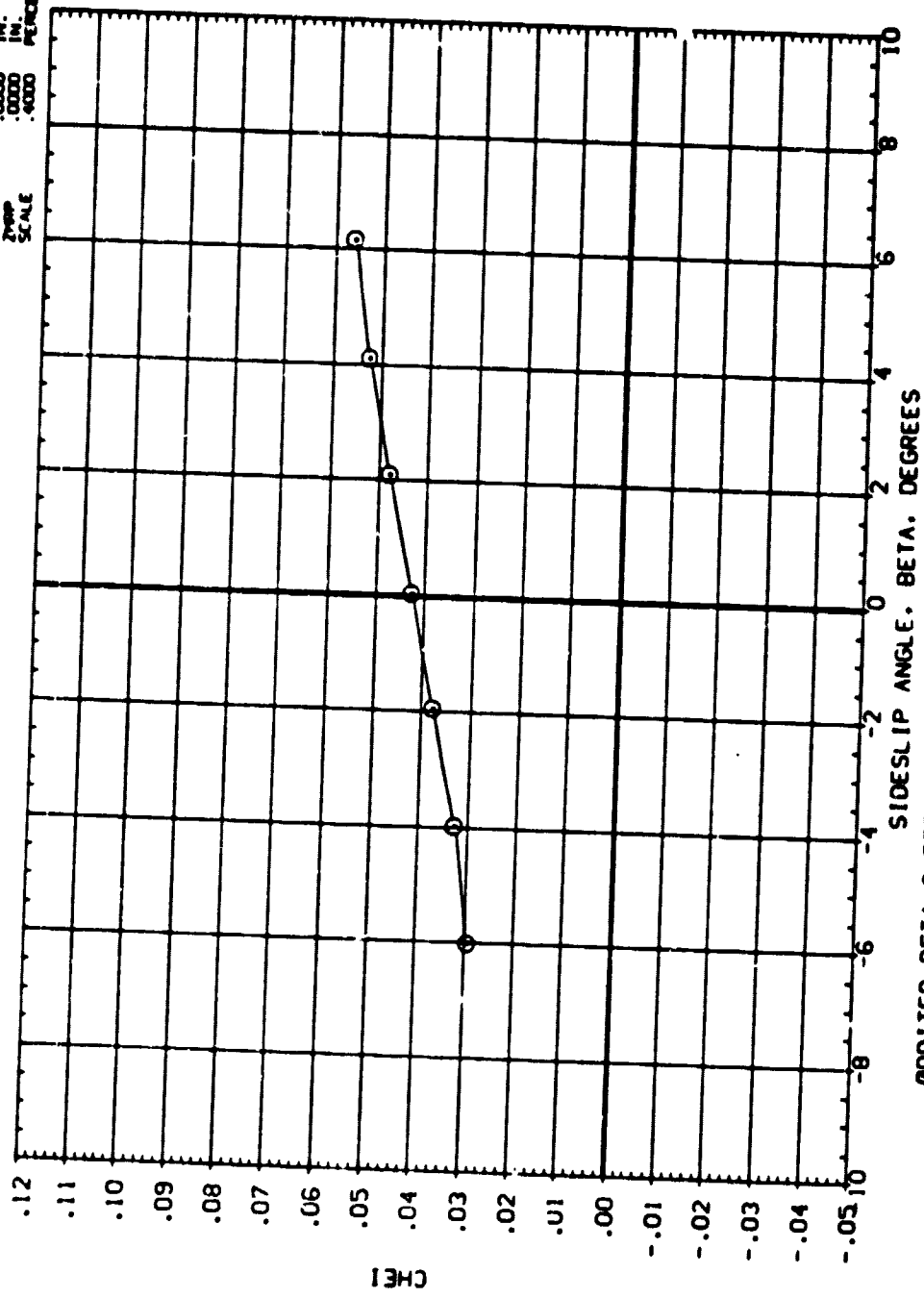


ORBITER BETA SWEEP

(0)MACH = 1.11

DATA SET SYMBOL: O FA28. MSC TVT 656. CONFIG. GEN22 VING GAP VAL

REFERENCE INFORMATION
 SWEP 6.1580 IN.
 LECP 5.1612 IN.
 BRCP 3.7470 IN.
 TRCP 2.7120 IN.
 ZAMP .0000 IN.
 SCALE .0000 PERIOD

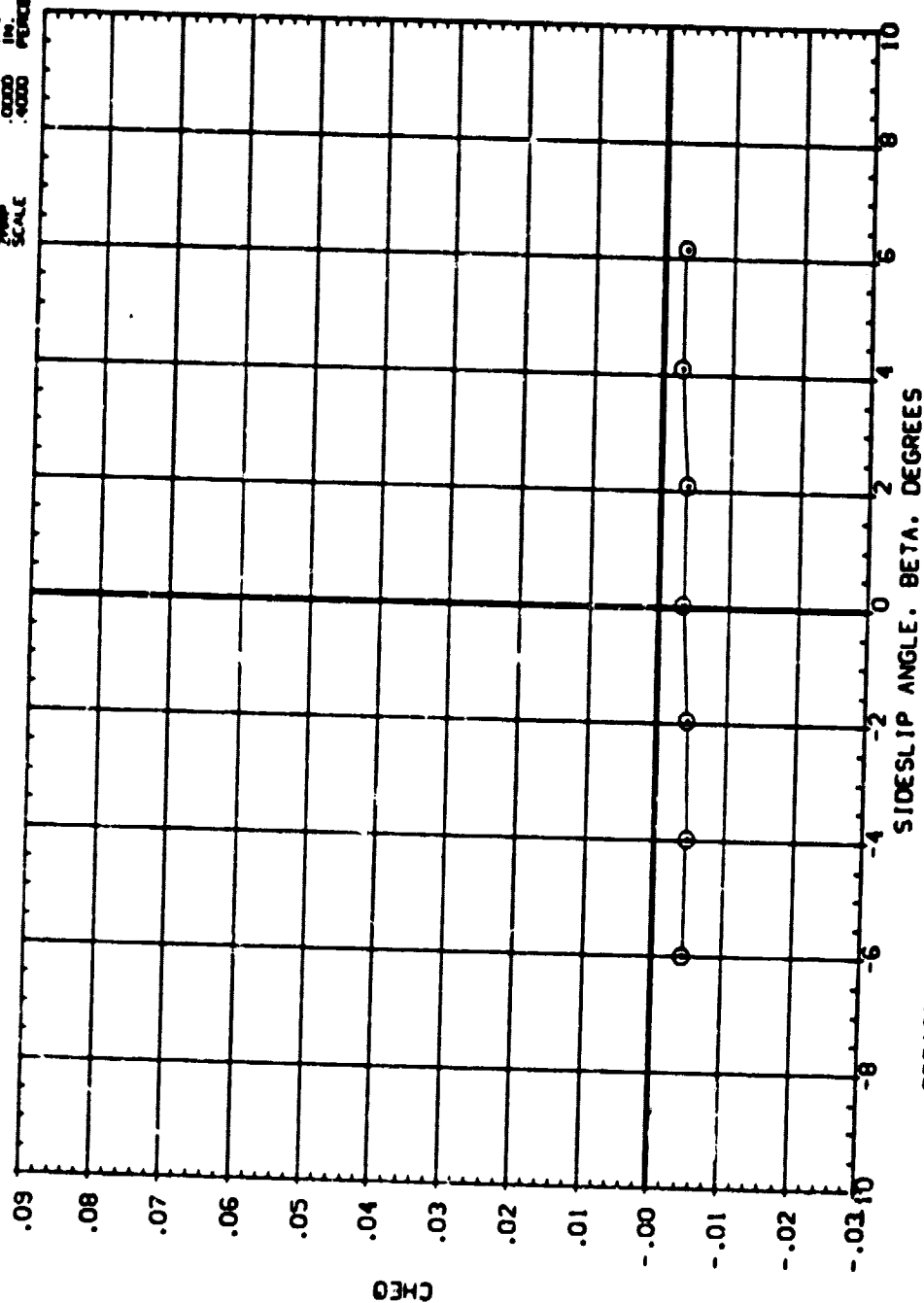


ORBITER BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2033) O FA20. MSFC TWT 636. CONFIG. ORVZ2 VING GAP VAL

REFERENCE INFORMATION
 SET 6.1500 30. IN
 DATE 3.1612 IN.
 NAME 3.7420 IN.
 TIME 2.7120 IN.
 TEMP .0000 IN.
 PRESS .0000 IN.
 SCALE .4000 PERCENT

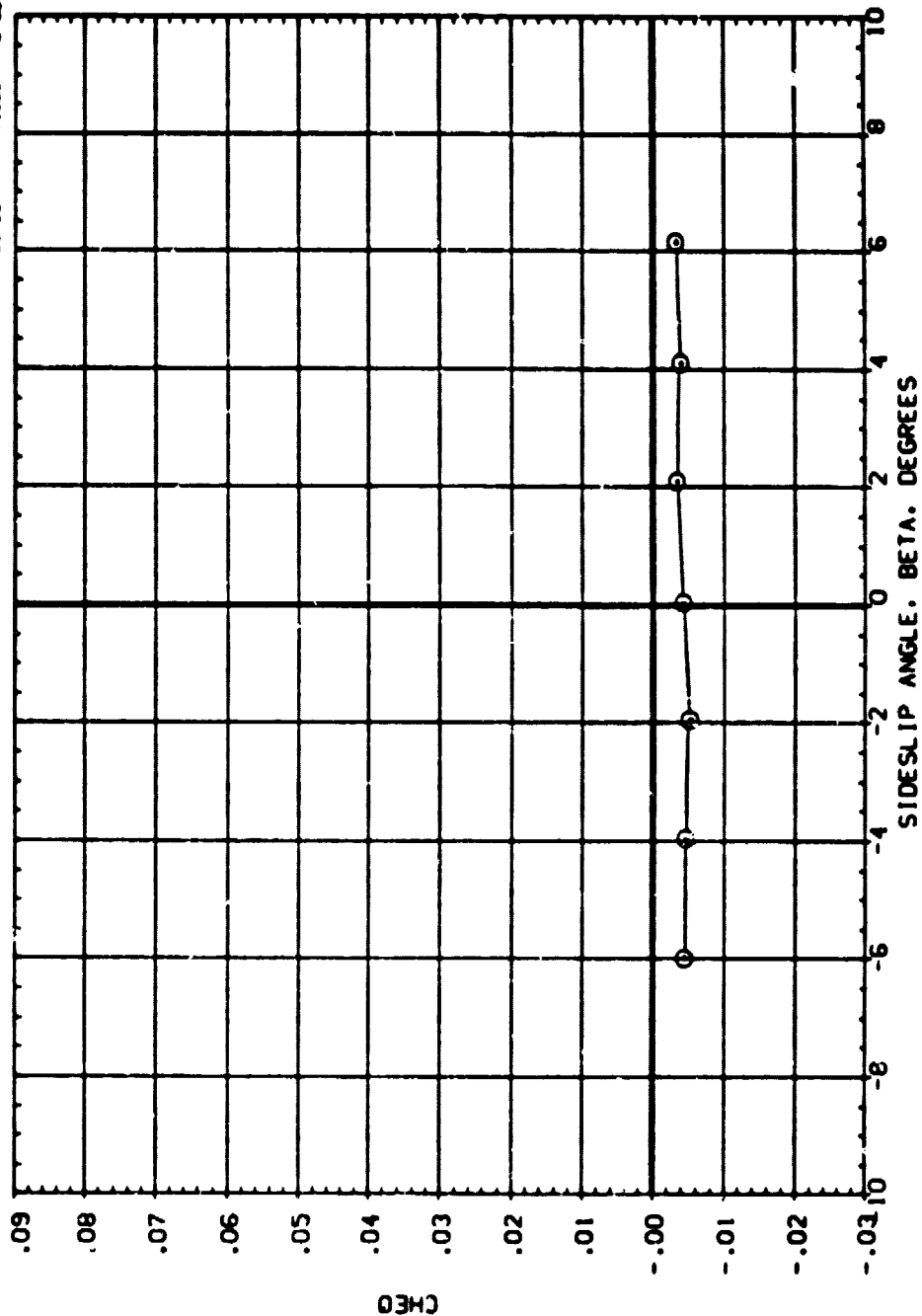


ORBITER BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL: 0 FA28. MSFC TWT 626. CONF. 15. CONJ22 VING GAP WAT

REFERENCE INFORMATION
 SET 8.1580 IN.
 LWT 3.1612 IN.
 BWT 3.5470 IN.
 WWT 2.7120 IN.
 TWT .0000 IN.
 ZWT .0000 IN.
 SCALE .0000 PERIOD

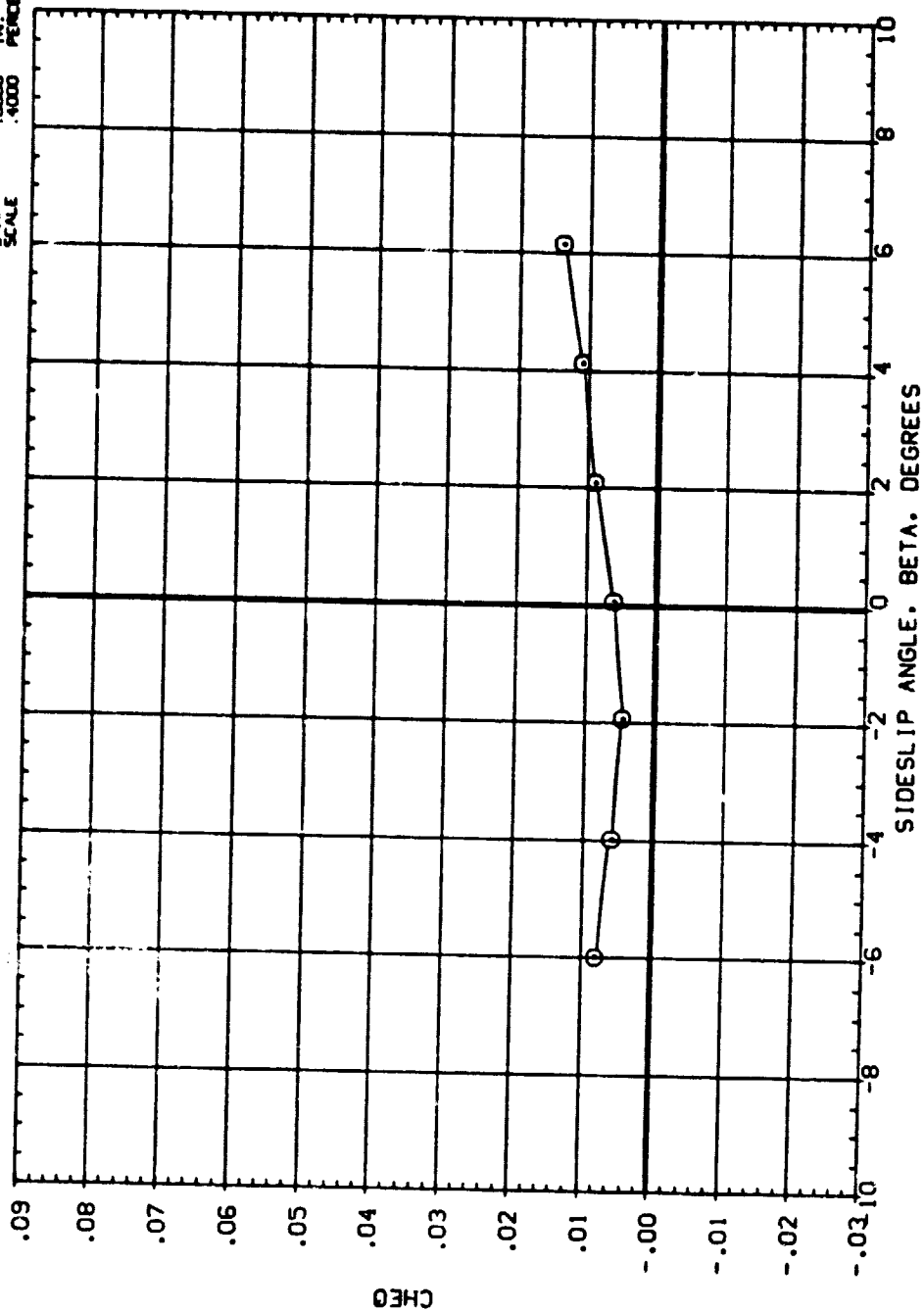


ORBITER BETA SWEEP

(B)MACH = .90

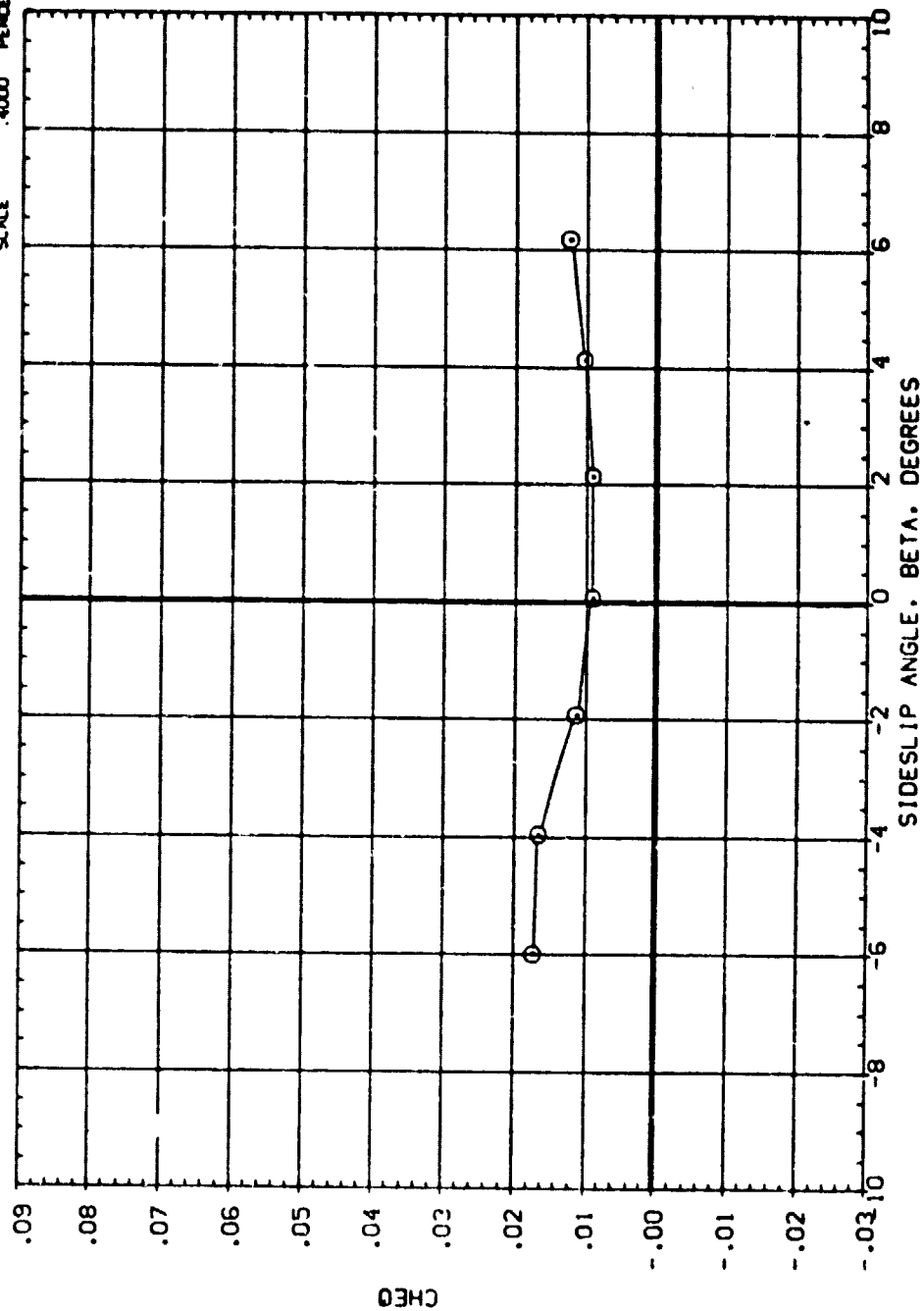
DATA SET SYMBOL: FA28. MSFC TVT 656. CONFIG. 02N2E2 VING GAP MAX

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



DATA SET SYMBOL CONFIGURATION DESCRIPTION
(FA2853) ○ FA28, MSC TWT 556, CONFIG. 02VZ22 VING GAP VAX

REFERENCE INFORMATION
SREF 6.1980 50. IN
LREF 5.1612 IN.
BREF 3.7470 IN.
XREF 2.7120 IN.
YREF .0000 IN.
ZREF .0000 IN.
SCALE .4000 PERCENT



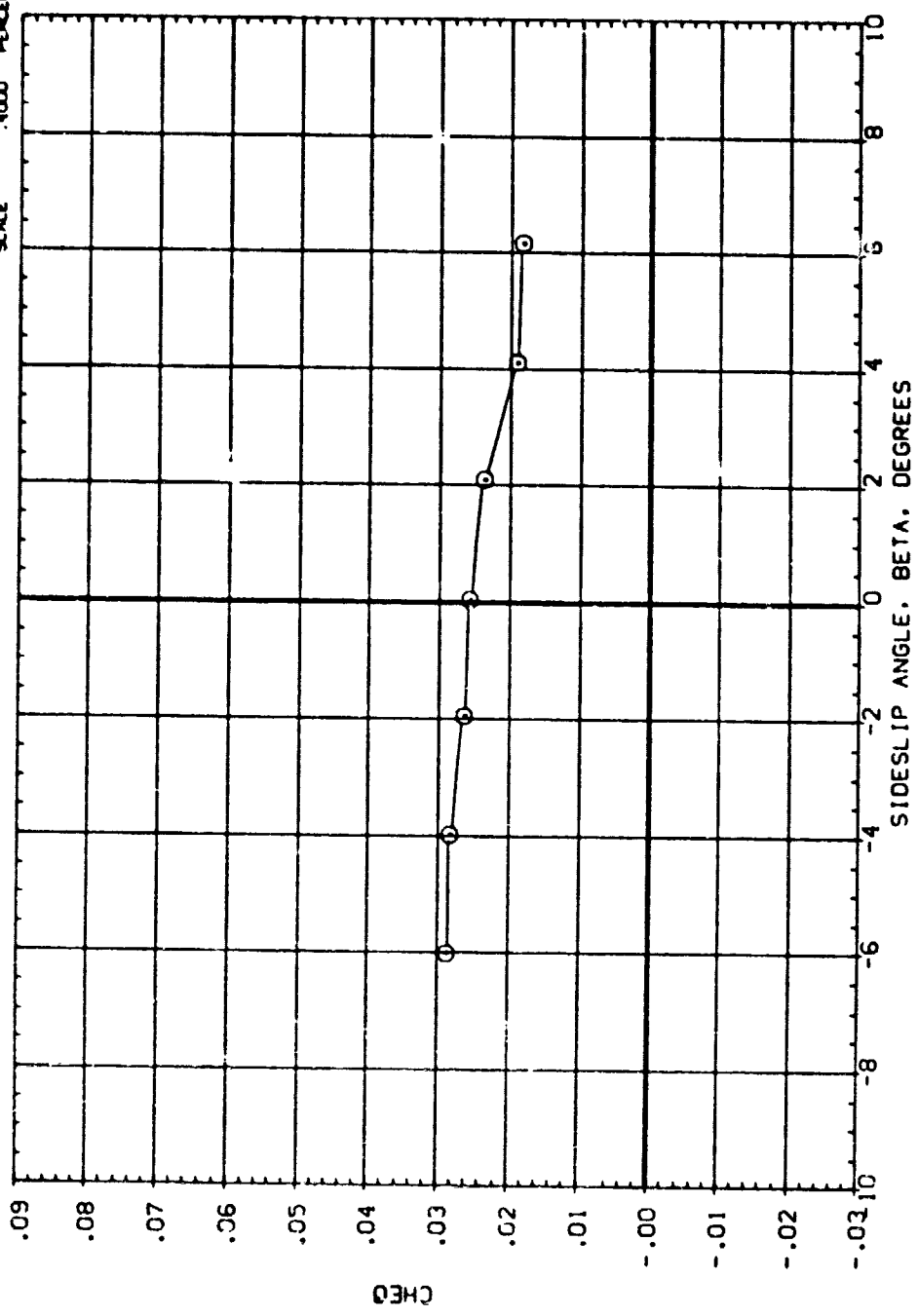
ORBITER BETA SWEEP

(0)MACH = 1.11

DATA SET SYMBOL CONFIGURATION DESCRIPTION REFERENCE INFORMATION

(FA2053) ○ FA20. MSFC TWT 656. CONF 16. 020322 VING GAP VAX

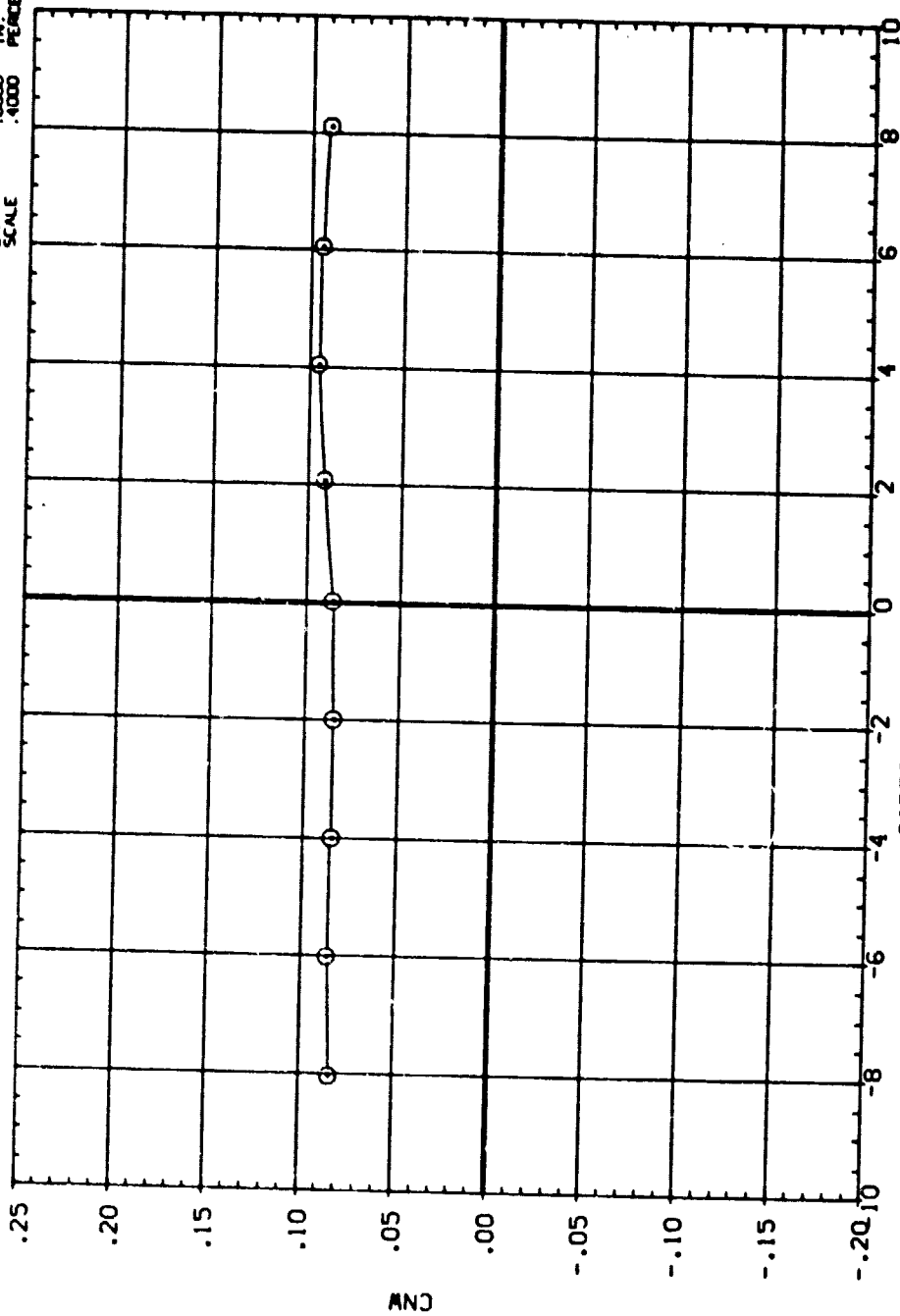
SREF	6.1980	IN.
LREF	5.1612	IN.
BREF	3.7470	IN.
HPRP	2.7120	IN.
THRP	.0000	IN.
SCALE	.4000	PERCENT



ORBITER BETA SWEEP
(E)MACH = 1.25

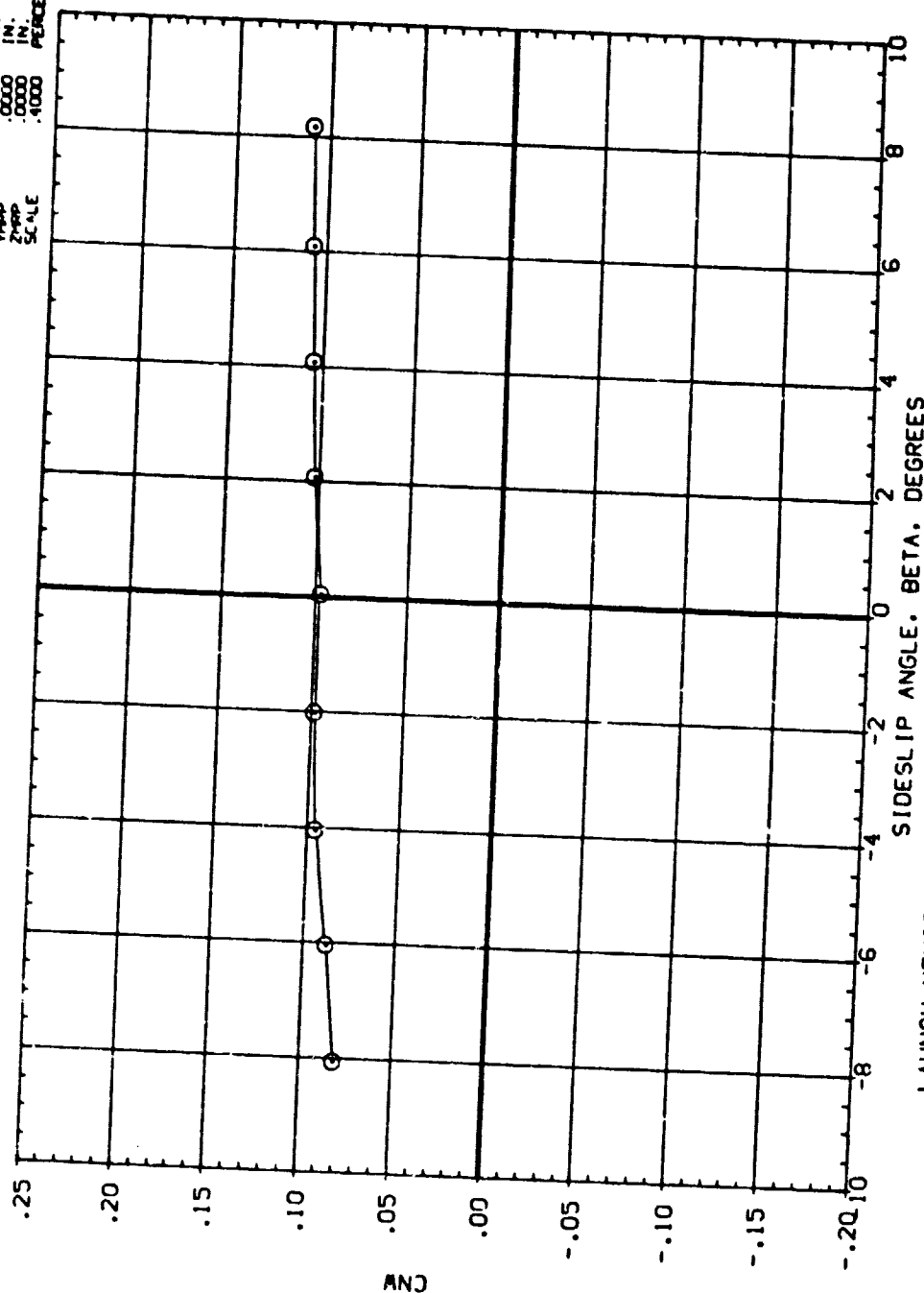
(FA2856) 9 FA28. MSFC TWT 656. CONF IG. 02VZE20WAA17353
(FA2857) DATA NOT AVAILABLE

37VJ5
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$$(A)MACH = .60$$

DATA SET SYMBOL: ☐ FA20. MSFC TVT 655. CONFIG. 02VJZ00VAATT753
 (FA2056) ☐ DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 5.1580 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT



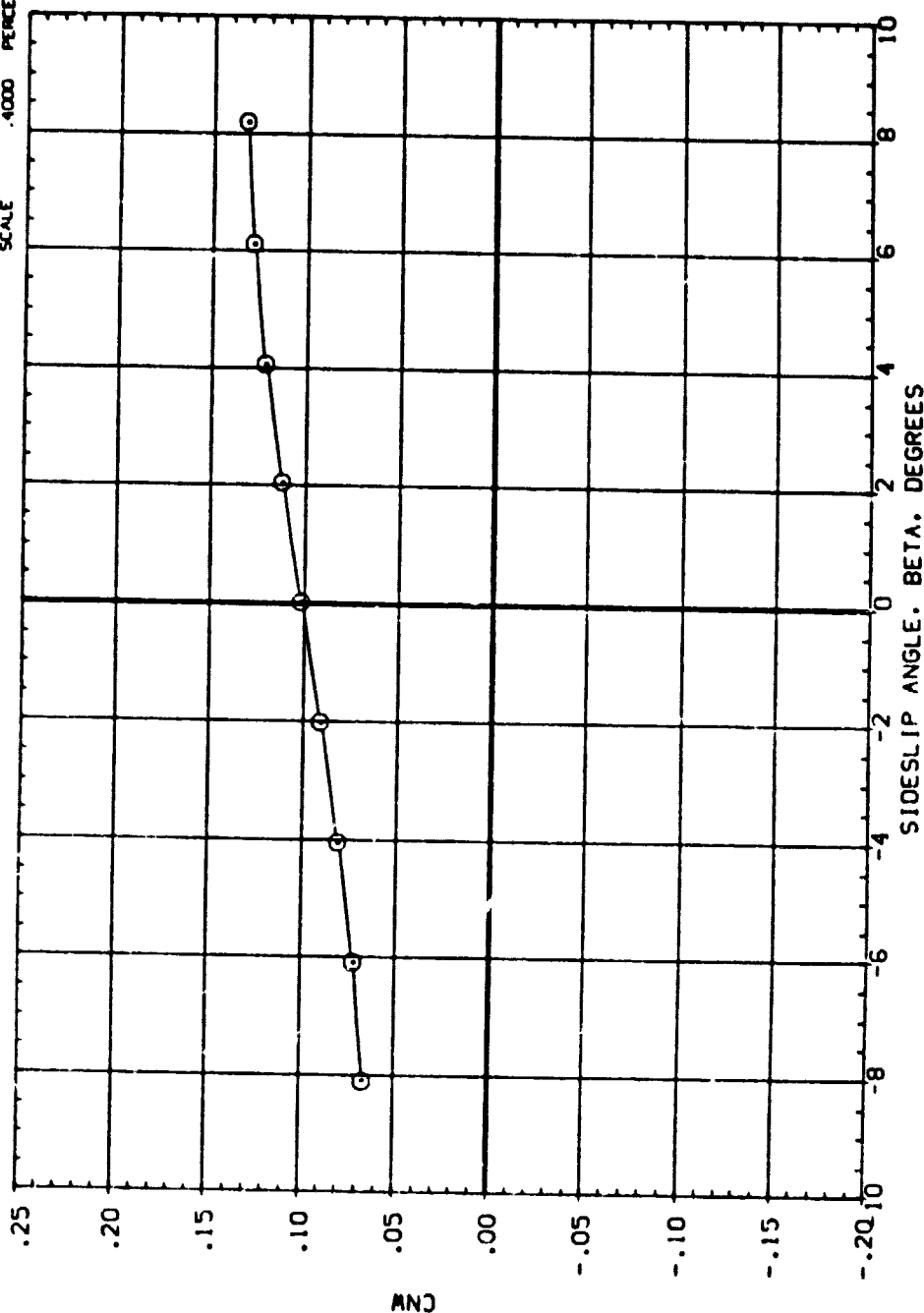
LAUNCH VEHICLE BETA SWEEP

(B)MACH = .90

ORIGINAL PAGE 15
 OF FOUR (1-1-52)

DATA SET SYMBOL: ☐ FA28, MSFC, TWT 656, CONFIG. 07022000AATT353
 (FA2856) ☐ DATA NOT AVAILABLE
 (FA2857)

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



LAUNCH VEHICLE BETA SWEEP

(C)MACH = 1.05

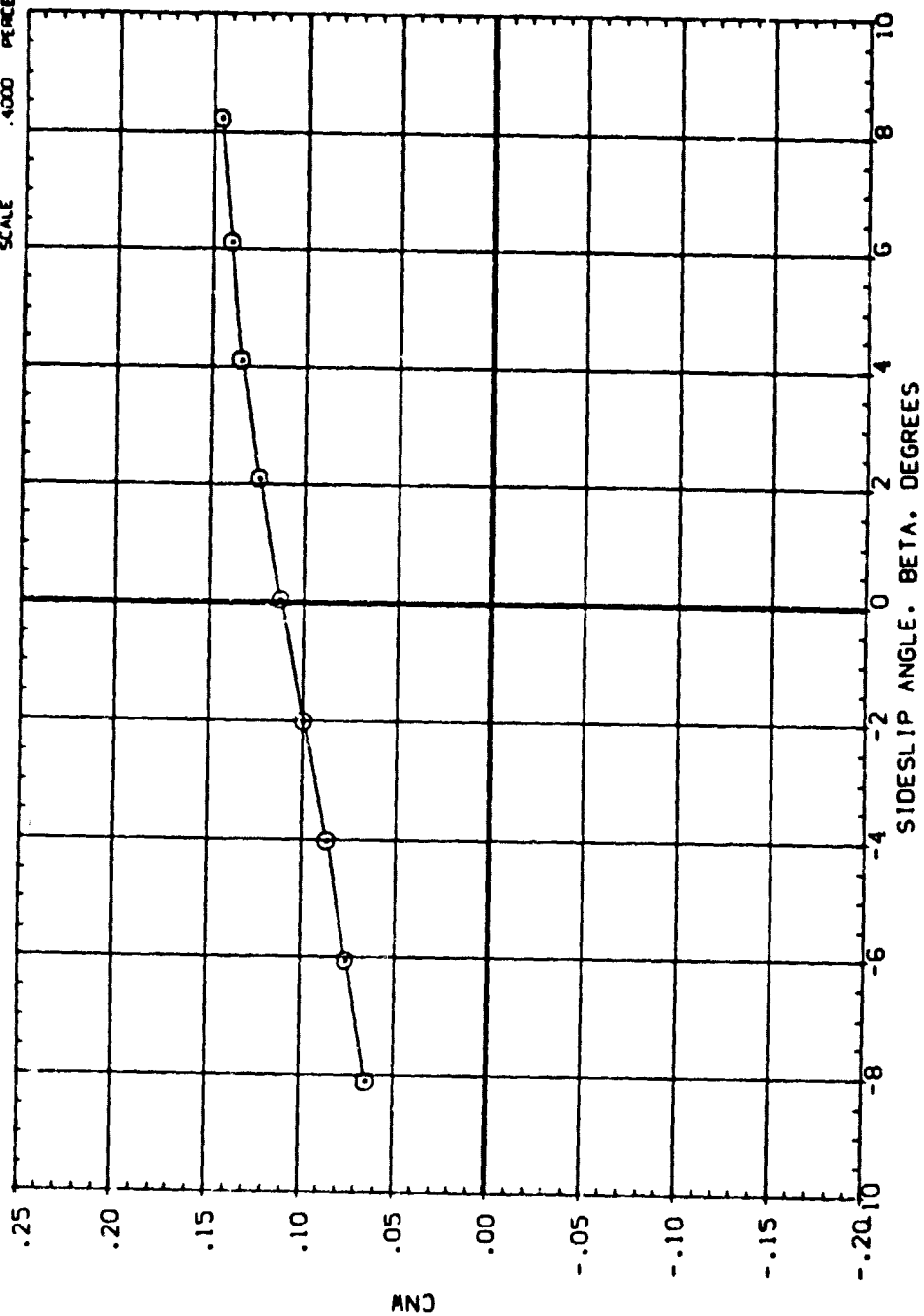
DATA SET SYMBOL: 9
 (FA2856)
 (FA2857)

CONFIGURATION DESCRIPTION

FA28. MSFC TVT 656. CONFIG. 02VZCZ00WAA1T753

DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1960 50. IN
 LREF 5.1612 IN.
 SREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT

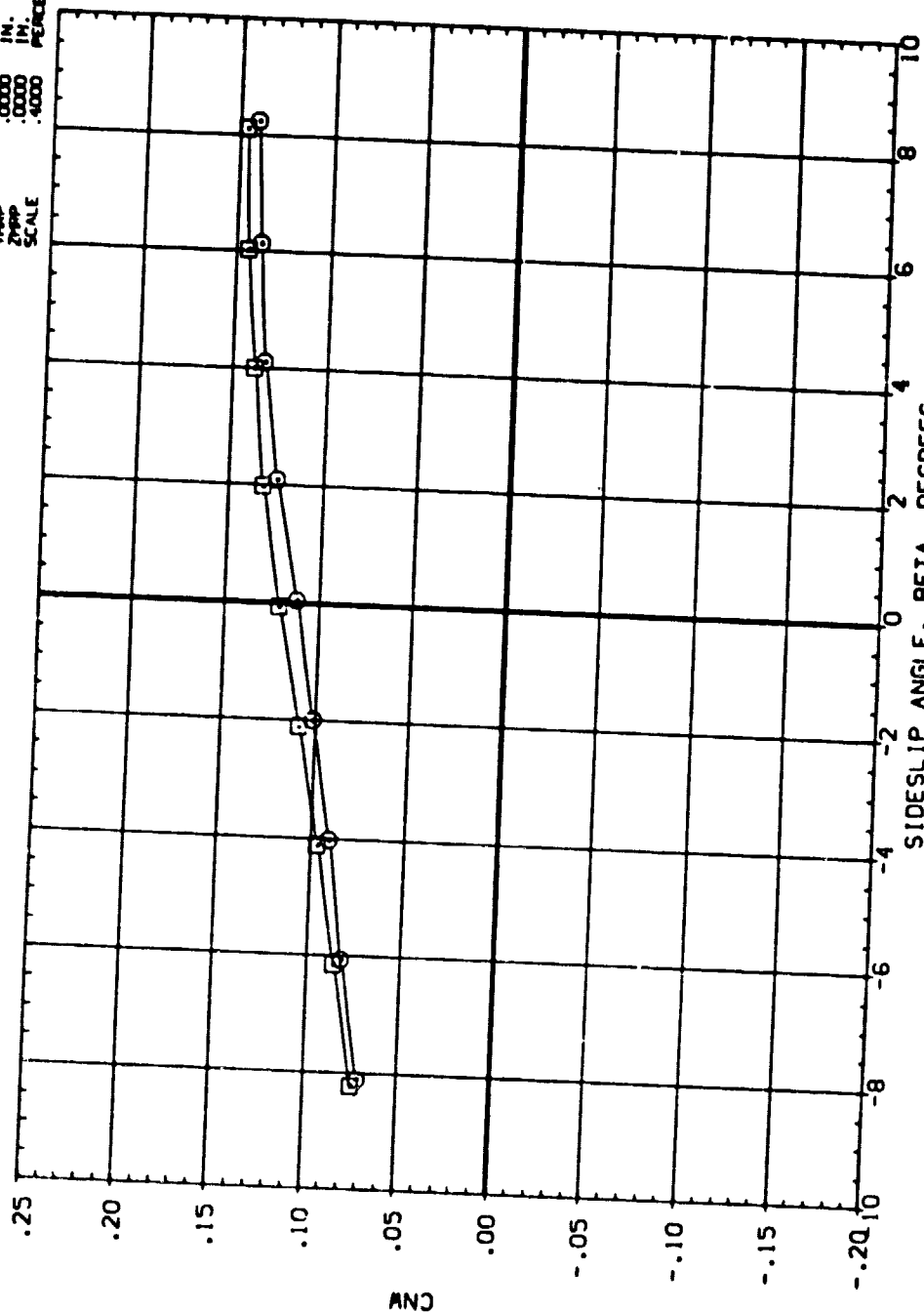


LAUNCH VEHICLE BETA SWEEP

(D)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2856) 8 FA28. MSFC TWT 656. CONF 16. 02VZL2MWAATT353
 (FA2857) 8 FA28. MSFC TWT 656. CONF 16. 02VZL2MWAATT353

REFERENCE INFORMATION
 SREF 6.1280 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



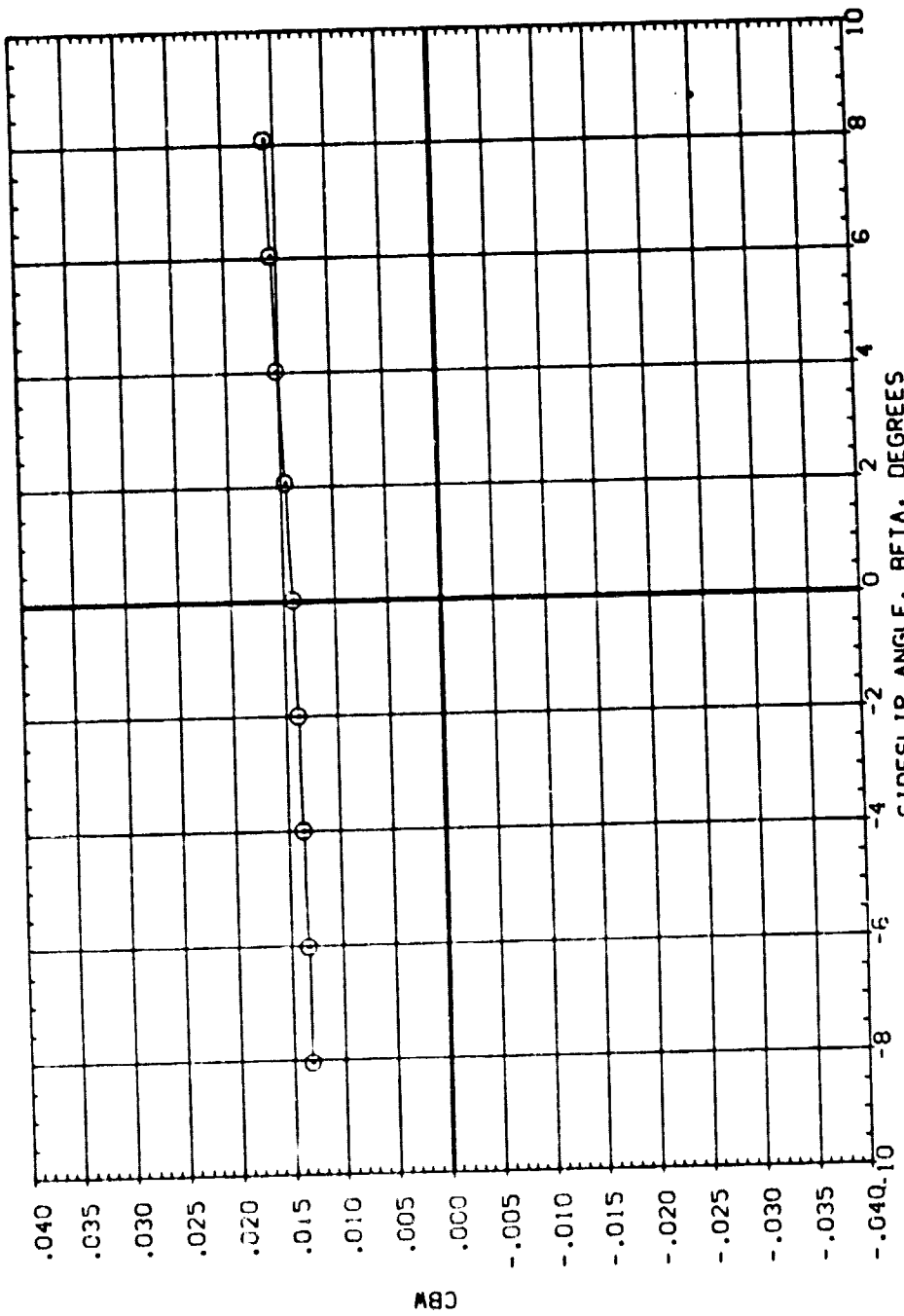
LAUNCH VEHICLE BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL: (FA2856)
 (FA2857)

CONFIGURATION DESCRIPTION
 FA28. MSFC TVT 656. CONF16. 02VZ2NMMATTJ53
 DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1890 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 RREF 2.7120 IN.
 TREF .0300 IN.
 SCALE .4000 PERCENT



LAUNCH VEHICLE BETA SWEEP

(A)MACH = .60

378V71VAV :ION V1VO
DATA NOT AVAILABLE
FA28. MSGC TWT 656.
959 LAT 35SM 82V3

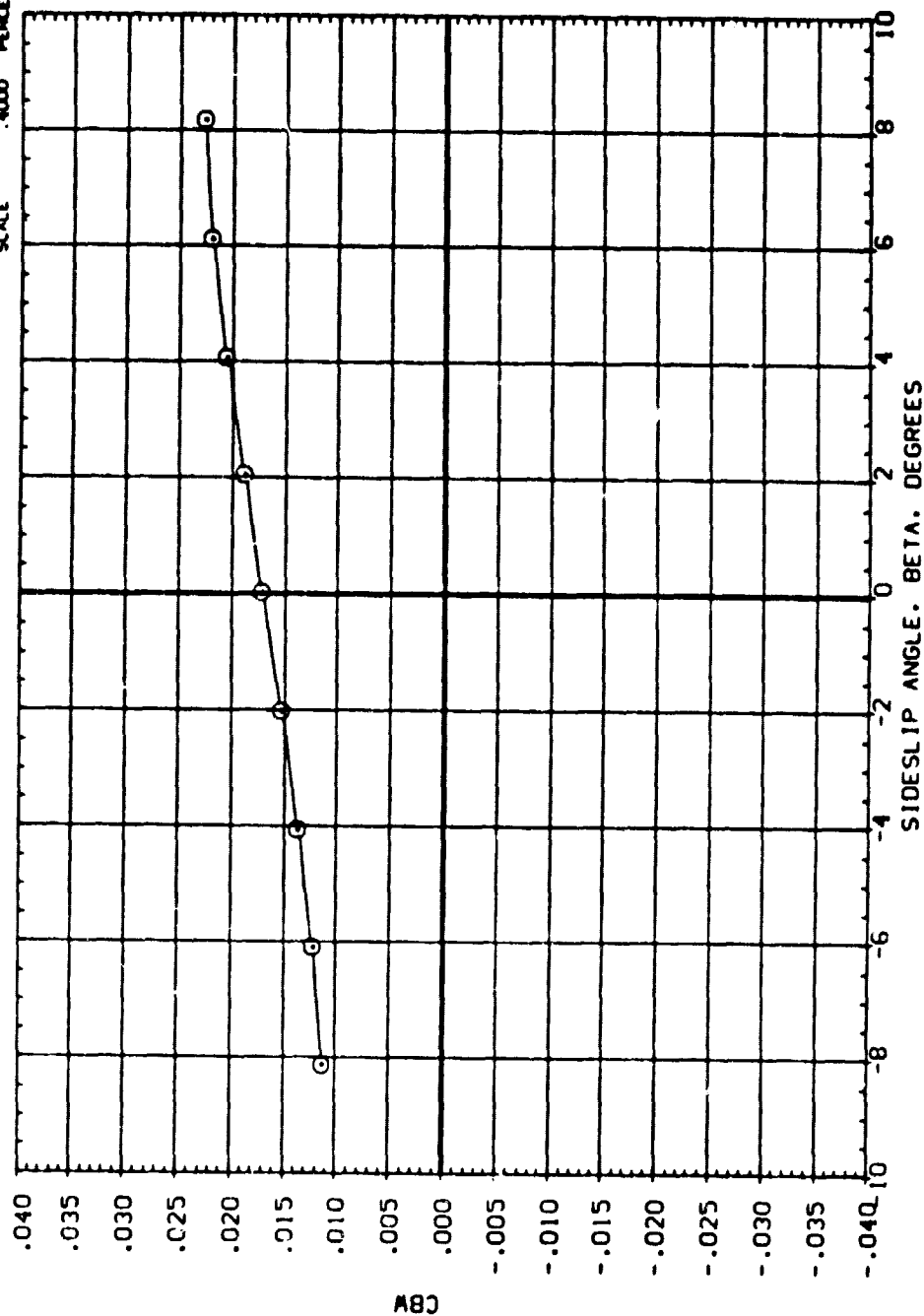
SCALE	.4000	PERIOD
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LAUNCH VEHICLE BETA SWEEP

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REFERENCE INFORMATION	
SREF	6.1980 IN.
LREF	5.1612 IN.
BREF	3.7470 IN.
WREF	2.7120 IN.
WREF	.0000 IN.
ZREF	.0000 IN.
SCALE	.0000 PERCENT

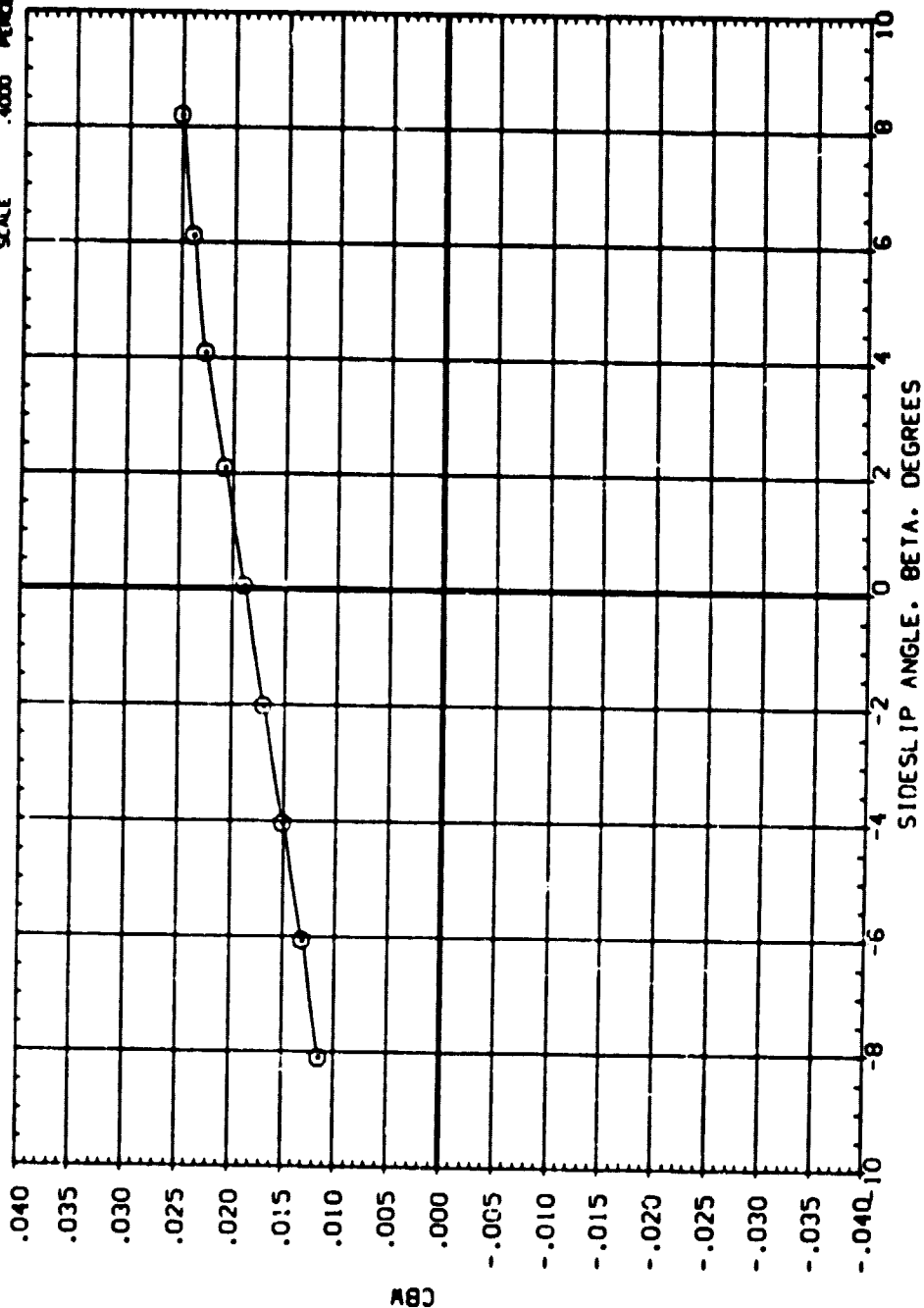


LAUNCH VEHICLE BETA SWEEP

$$(C)MACH = 1.05$$

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2856) FA28. HSC TWT 656. CONFIG. 02V2E20WAA17353
 (FA2857) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SHEET 6.1580 SQ. IN.
 LINE 6.1612 IN.
 BREF 3.2470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCH

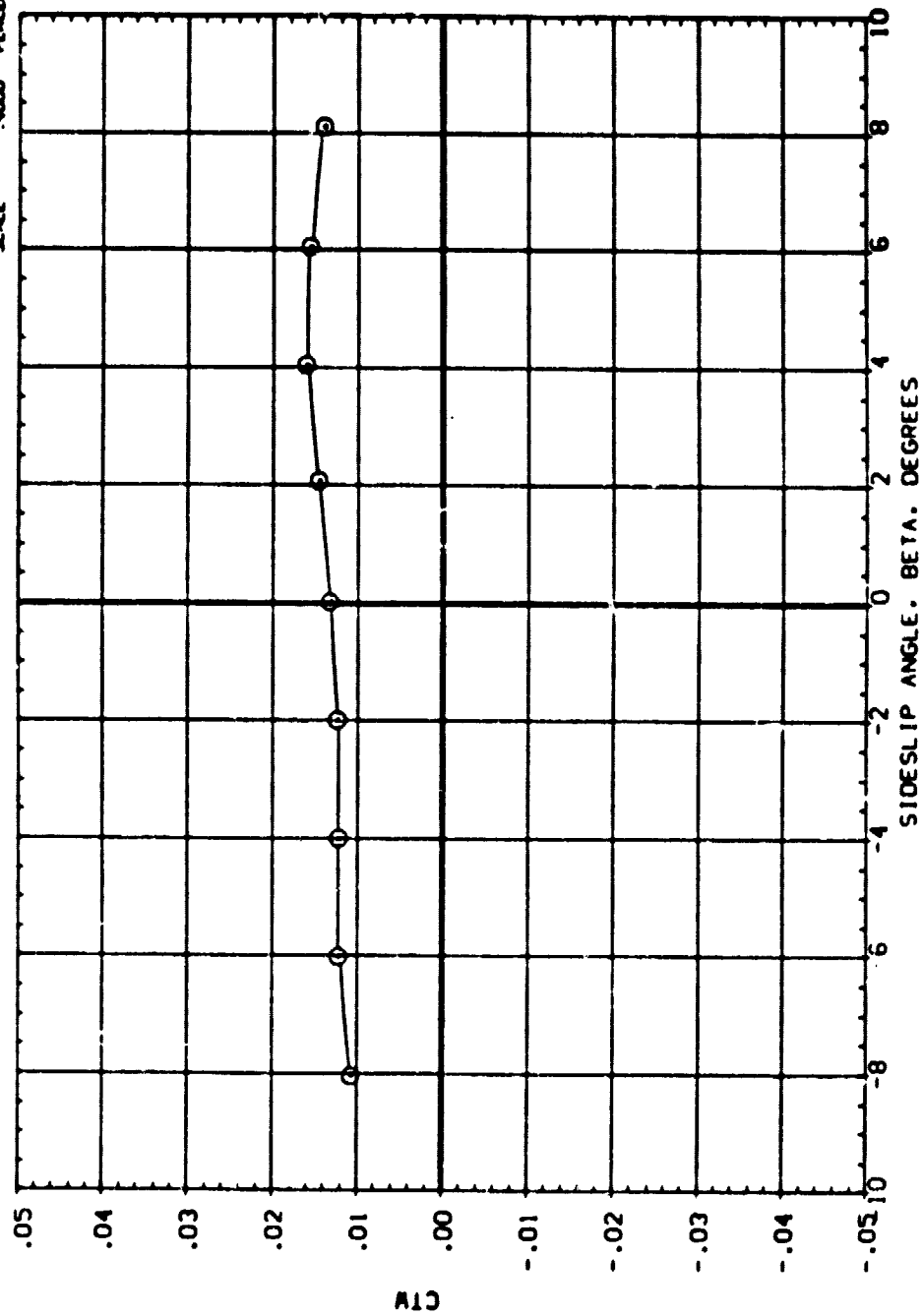


LAUNCH VEHICLE BETA SWEEP

(D)MACH = 1.10

DATA SET: SYMBOL 3
 (FA2055) (FA2057) 3
 CONFIGURATION DESCRIPTION
 FA20. MSFC TWT 556. CONFIG. ORVZ2000A11253
 DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1617 IN.
 SREF 3.7470 IN.
 SREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

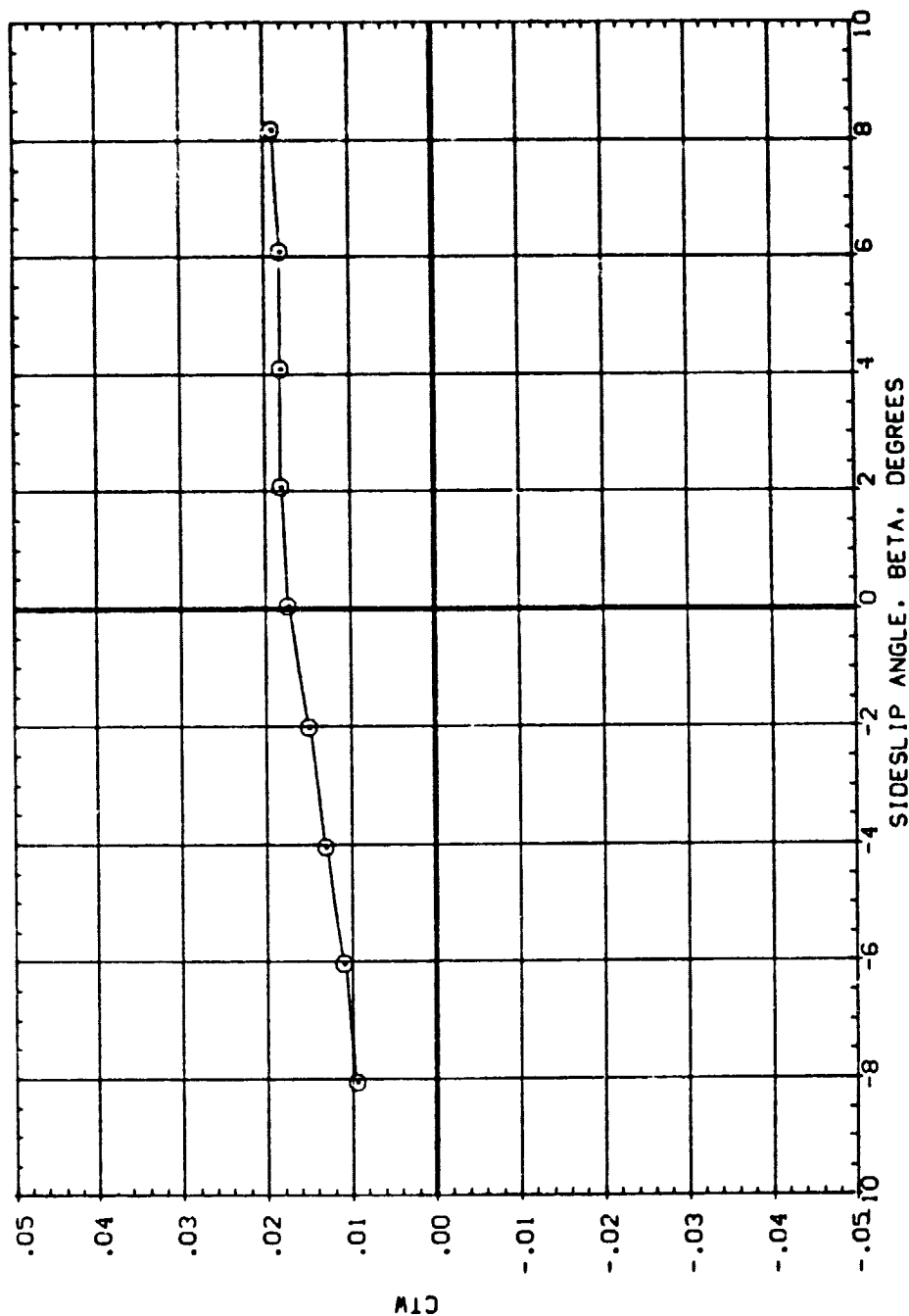


LAUNCH VEHICLE BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL: 8
 (FA2855) FA28, MSFC, TWT 655, CONFIG. 02VZ2ZNNAA11353
 (FA2857) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YMRP 2.7120 IN.
 ZMRP .0000 IN.
 SCALE .4000 PC/IN



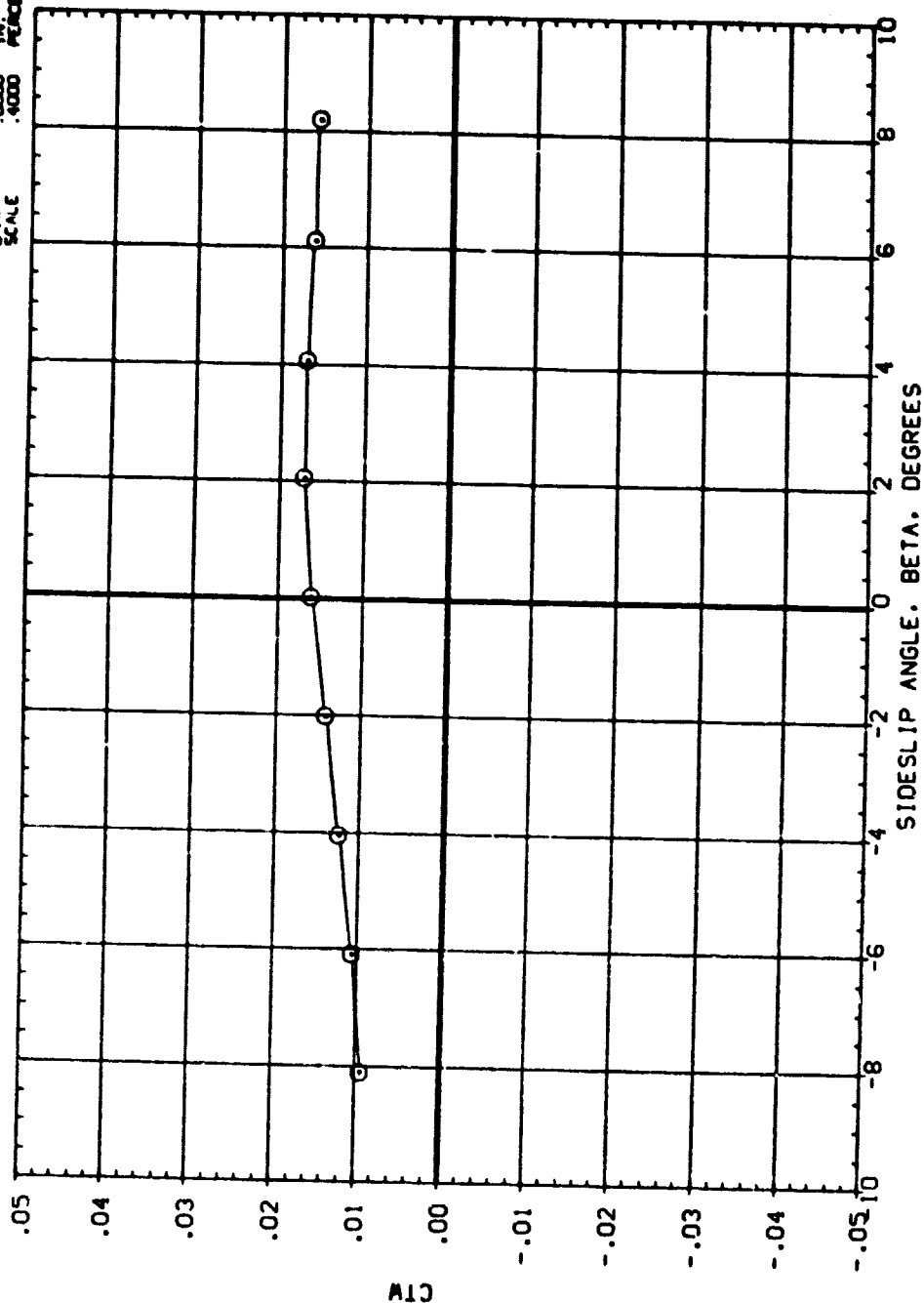
LAUNCH VEHICLE BETA SWEEP

(B)MACH = .90

6 - 6

DATA SET SYMBOL: FA2855
 CONFIGURATION DESCRIPTION: FA28, MF5C TWT 656, CONFIG. 00VZE200AATT353
 DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1260 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



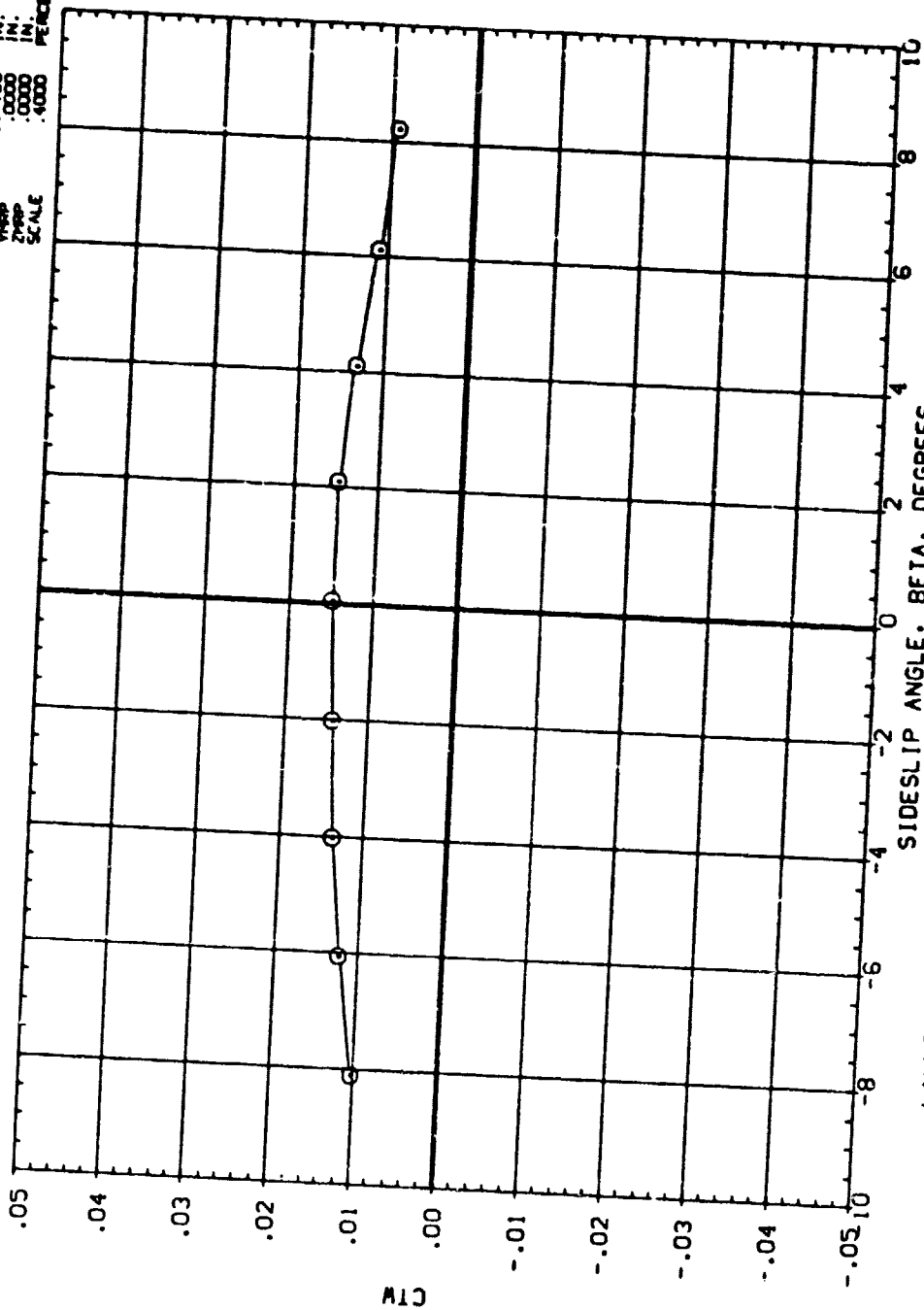
LAUNCH VEHICLE BETA SWEEP

(C)MACH = 1.05

DATA NOT TESTED
 OF FOUR QUALITY

DATA SET SPEED. CONFIGURATION DESCRIPTION
 (FA2055) FA20. MSFC TWT 656. CONFIG. 02VZ20MAATT353
 (FA2057) DATA NOT AVAILABLE

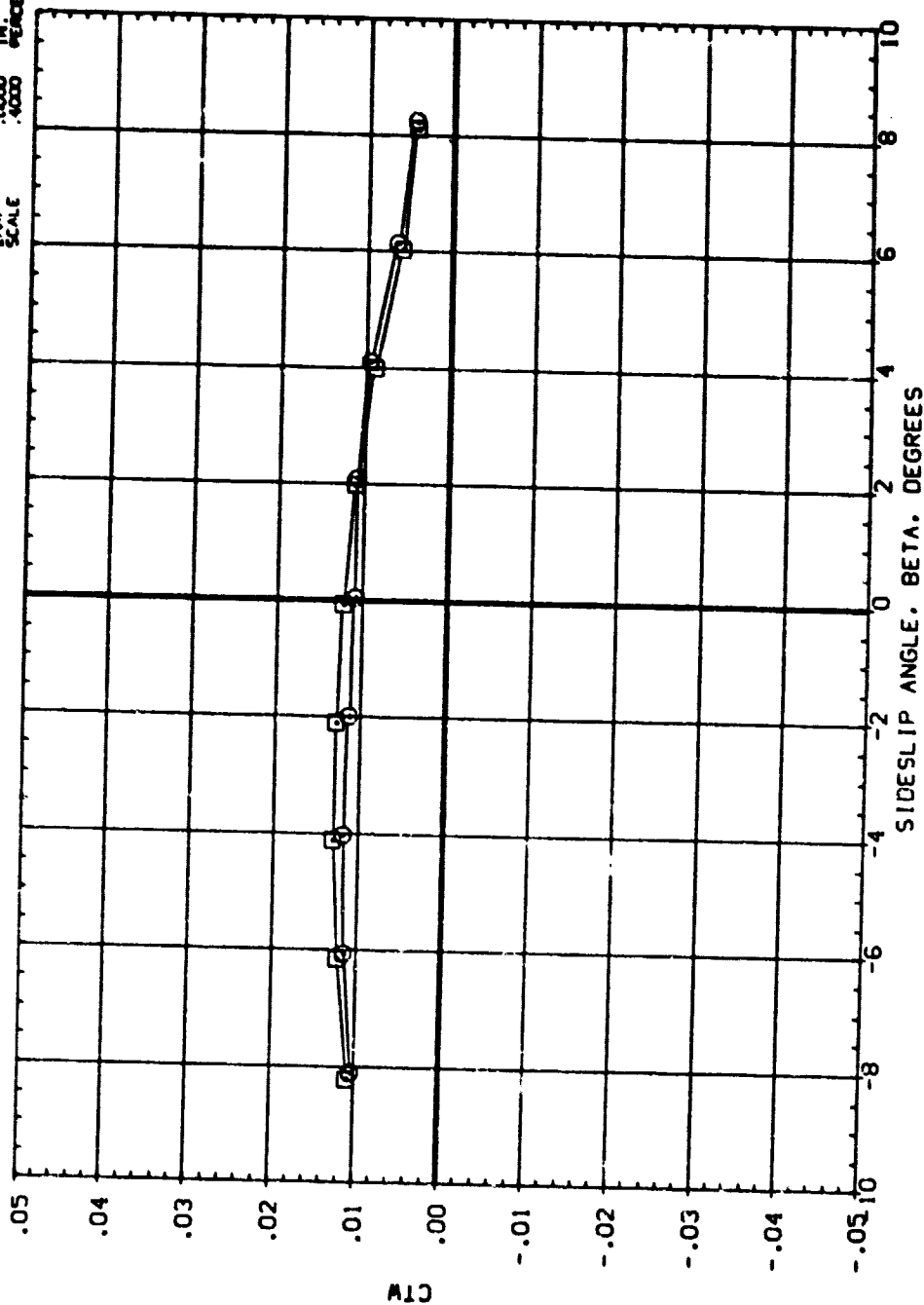
REFERENCE INFORMATION
 SREF 6.1890 SQ. IN.
 LREF 2.1612 IN.
 BREF 2.1410 IN.
 VREF 2.1120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCH



LAUNCH VEHICLE BETA SWEEP
 (D)MACH = 1.10

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION:
 FAZB: MSFC INT 856: CONF 13: 020Z2000AATT352
 FAZB: MSFC INT 856: CONF 16: 020Z2000AATT353

REFERENCE INFORMATION
 SWEEP 6.1980 SQ. IN.
 LINEP 5.1612 IN.
 SWEEP 2.7470 IN.
 SWEEP 2.7120 IN.
 SWEEP .0000 IN.
 SWEEP .0000 IN.
 SCALE 4000 PERIOD

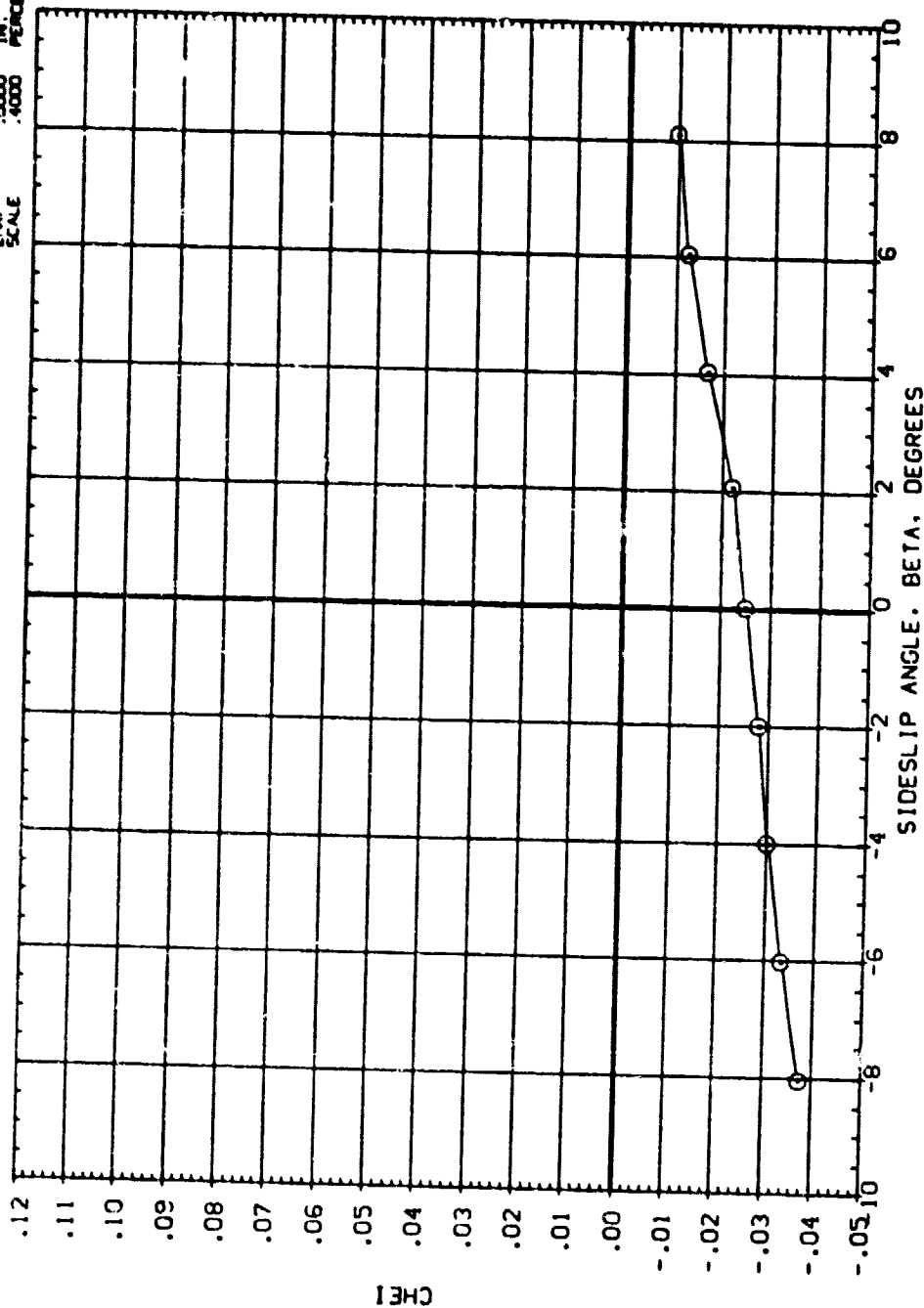


LAUNCH VEHICLE BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL: FA28. MSFC TWT 656. CONFIG. 02UZE20MAAT7353
 (FA2856) (FA2857) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1880 IN.
 LREF 3.1812 IN.
 BREF 3.7172 IN.
 XREF 3.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

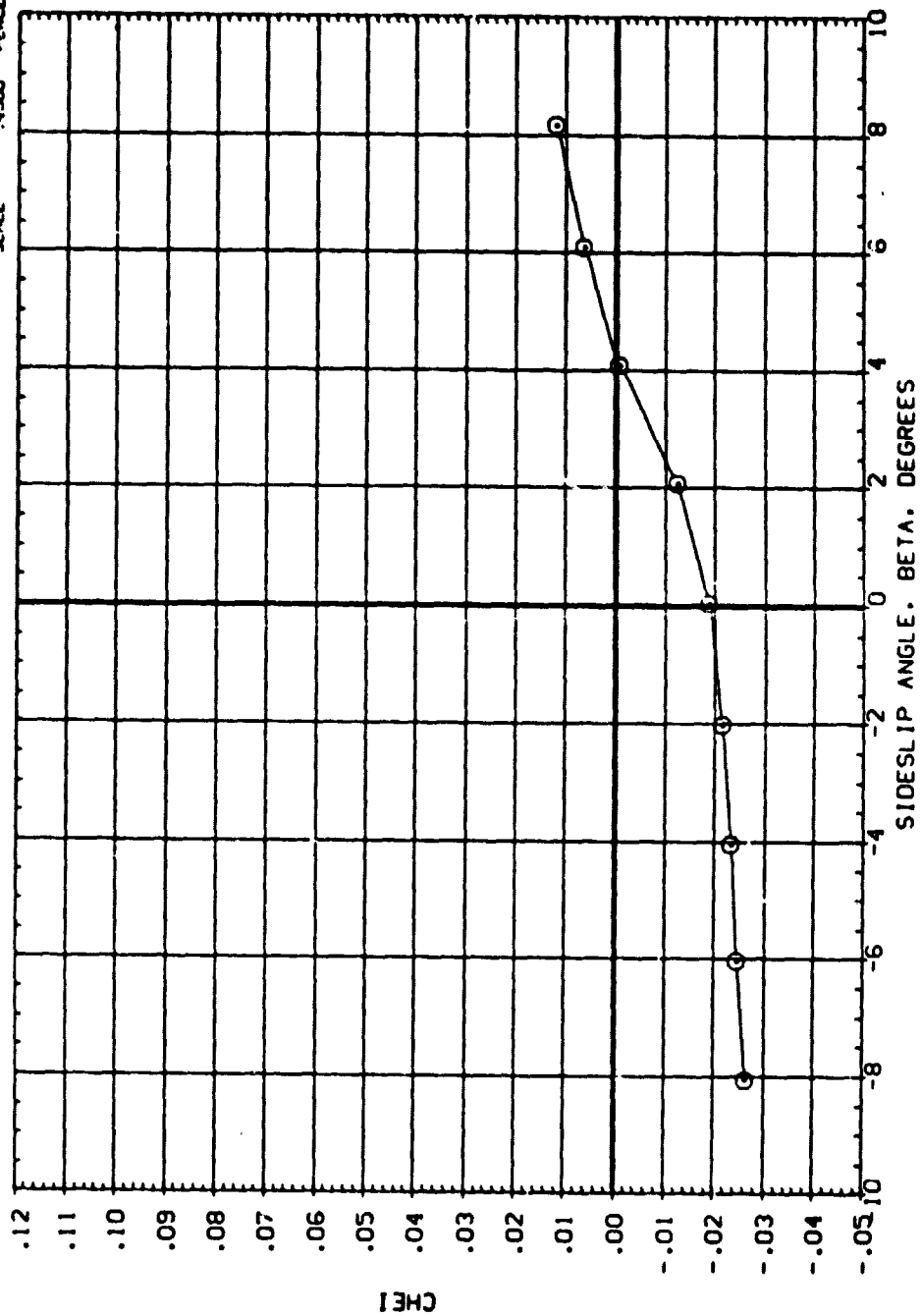


LAUNCH VEHICLE BETA SWEEP

(A)MACH = .60

DATA SET SYMBOL: ☐ FA28, MSFC TWT 656, CONFIG. 02V2E2NNAATT353
 (FA2856) ☐ DATA NOT AVAILABLE
 (FA2857)

REFERENCE INFORMATION
 SREF 6.1280 SD IN
 LREF 5.1612 IM
 BREF 3.7470 IM
 XREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

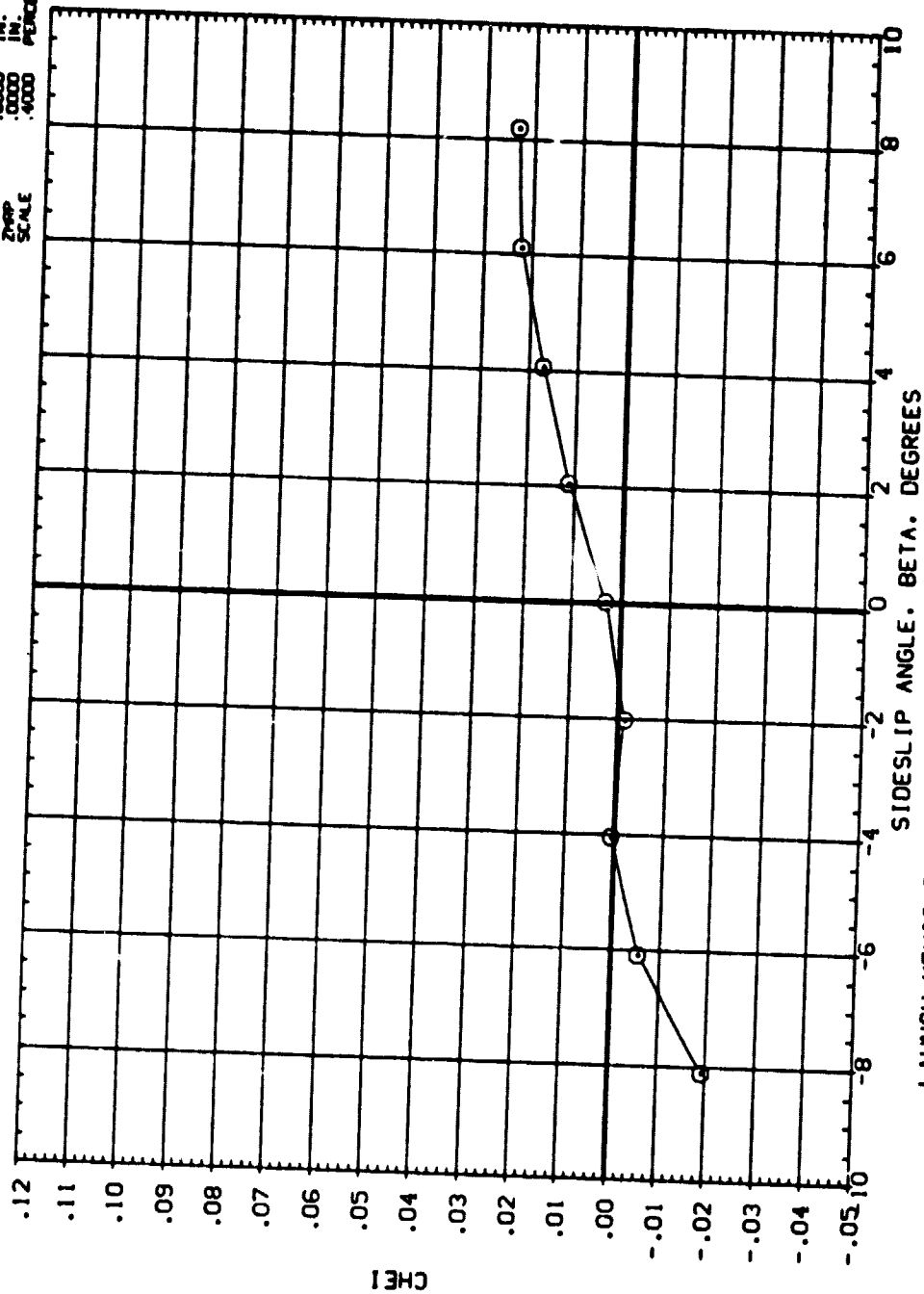


LAUNCH VEHICLE BETA SWEEP

(B)MACH = .90

DATA SET SYMBOL: ☐ CONFIGURATION DESCRIPTION: FA28. MSFC. TWT. 656. CONF. 1G. 00VZ20WVAAT153
 (FA2856) (FA2857) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 32 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 XREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCON

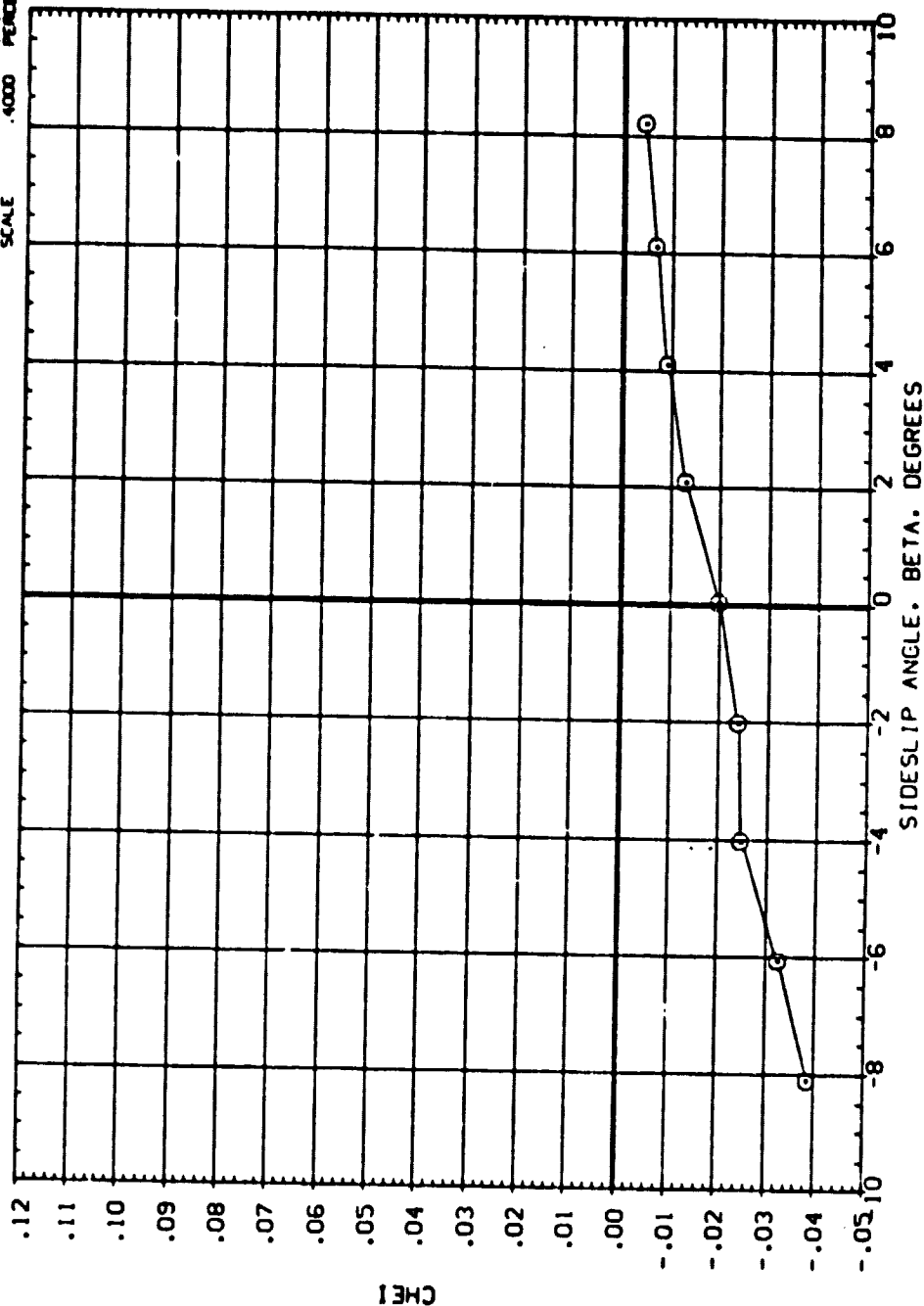


LAUNCH VEHICLE BETA SWEEP

(C)MACH = 1.05

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28. MSFC TWT 656. CONFIG. 02VZ2204AATT353
 (FA2856) (FA2857) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1260 30. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

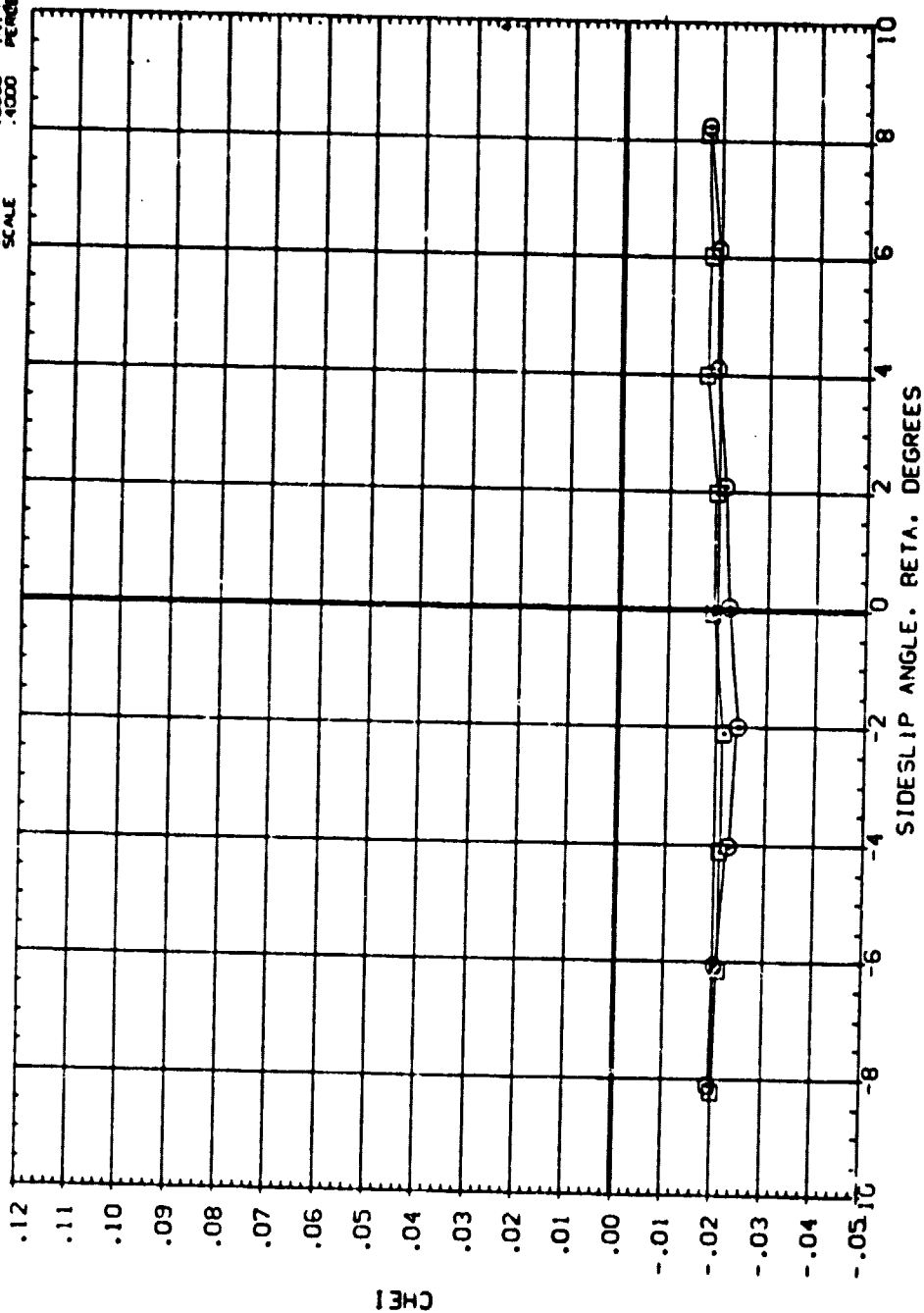


LAUNCH VEHICLE BETA SWEEP

(0)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2855) 8 FA28. MSC TVT 656. CONFIG. 02VZ2MNAATT353
 (FA2857) 8 FA28. MSC TVT 656. CONFIG. 02VZ2MNAATT353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 3.1612 IN.
 WREF 3.7470 IN.
 VREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

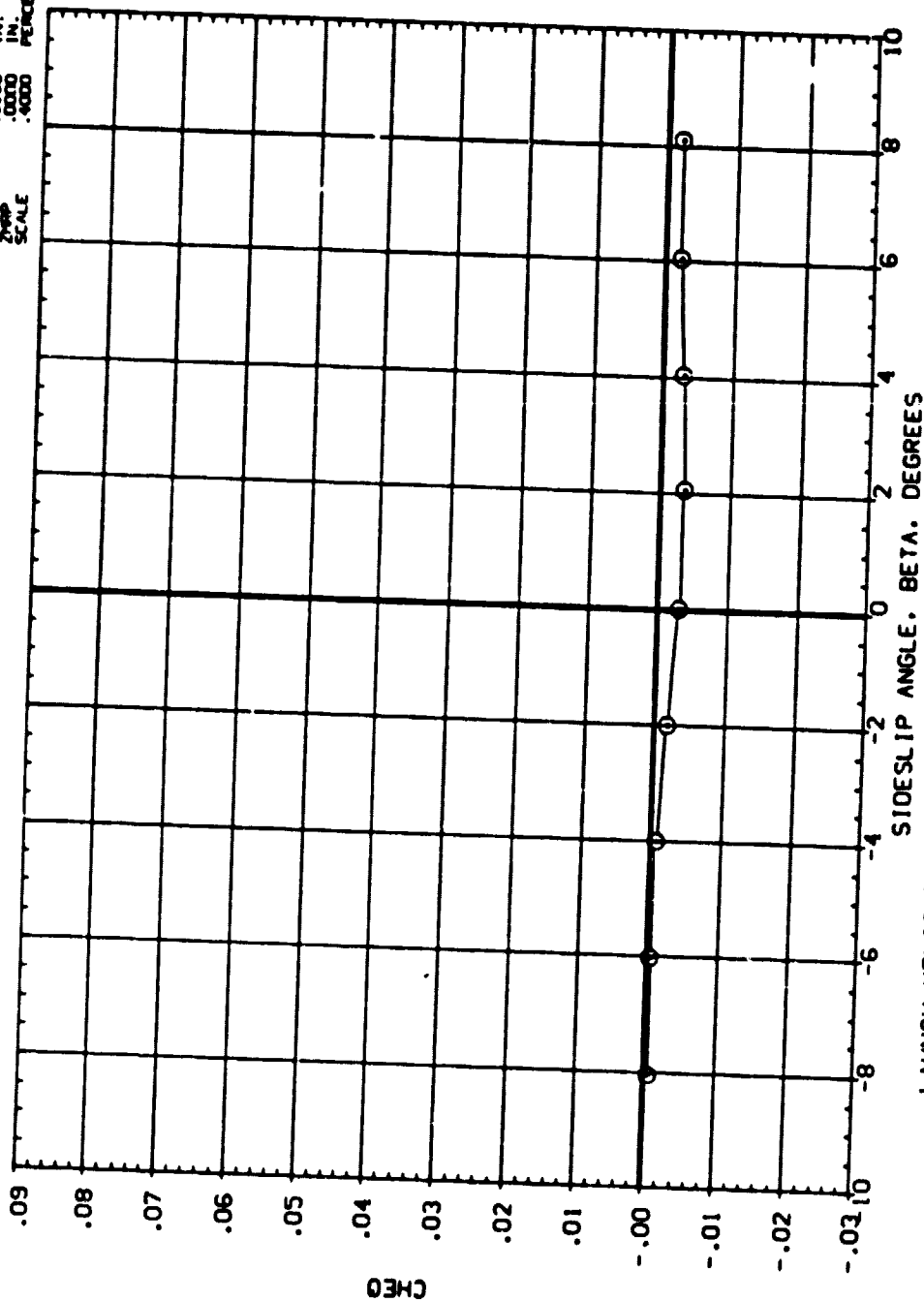


LAUNCH VEHICLE BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL: A
 (FA2856) (FA2857)
 CONFIGURATION DESCRIPTION
 FA28. HSTC TWT 655. CONFIG. 02VZ2MNAATT353
 DATA NOT AVAILABLE

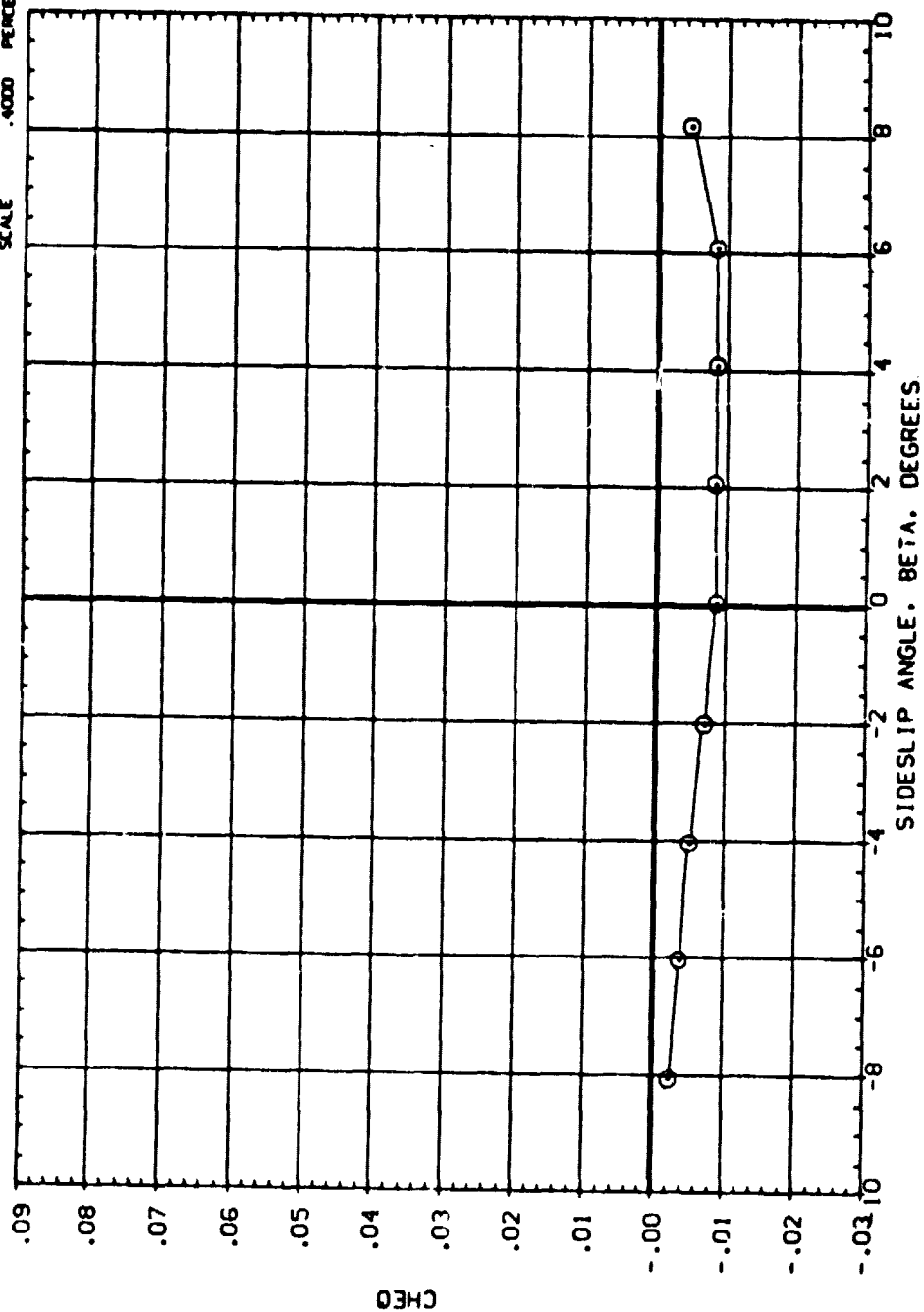
REFERENCE INFORMATION
 SREF 6.1280 90. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



LAUNCH VEHICLE BETA SWEEP

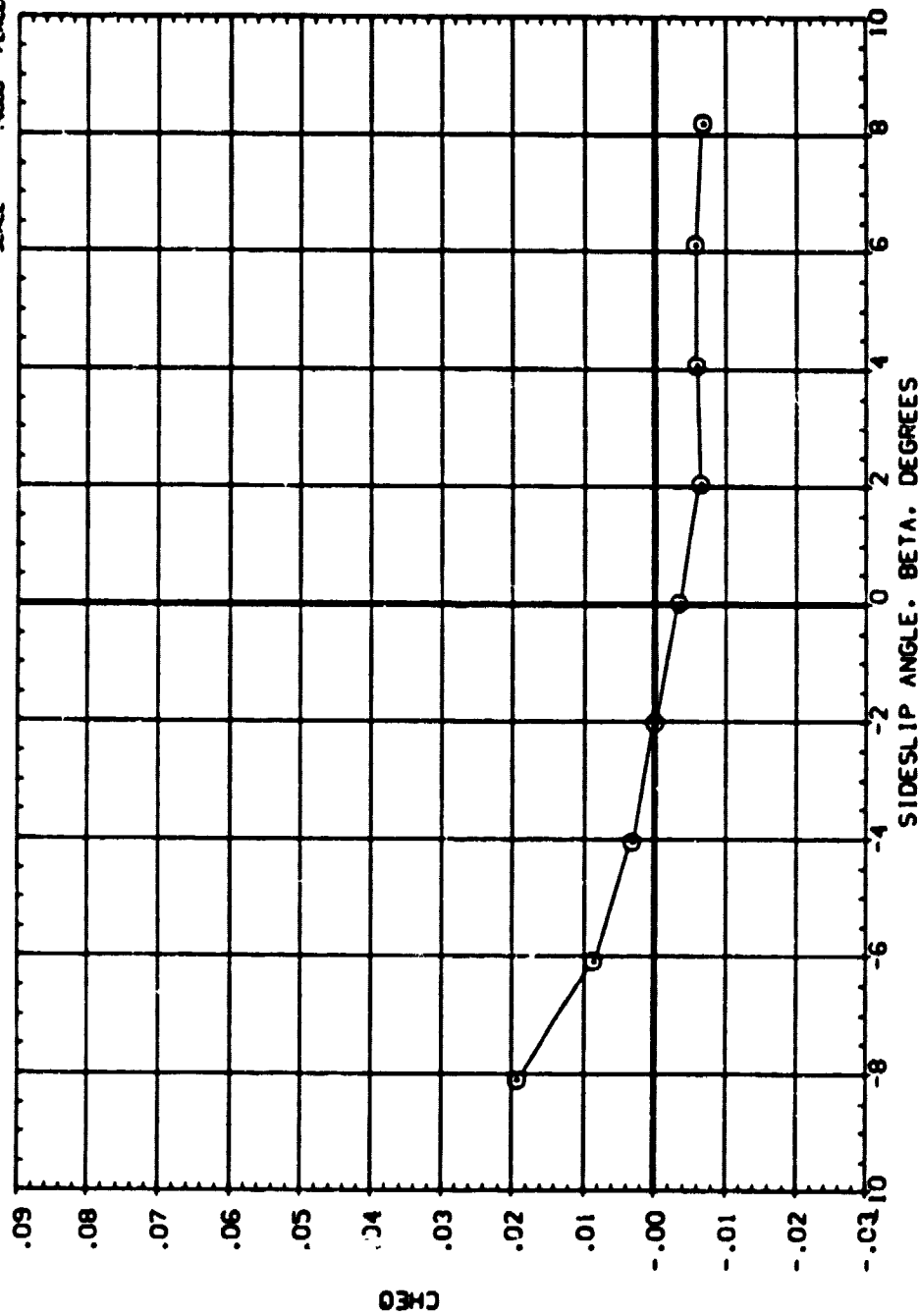
(A)MACH = .60

REFERENCE INFORMATION	
SHEET	6.1280 IN.
LEFT	5.1612 IN.
SPACE	3.7470 IN.
TOP	2.7120 IN.
WIDE	.0000 IN.
DEEP	.0000 IN.
SCALE	.0000 PERCENT



(B)MACH = .90

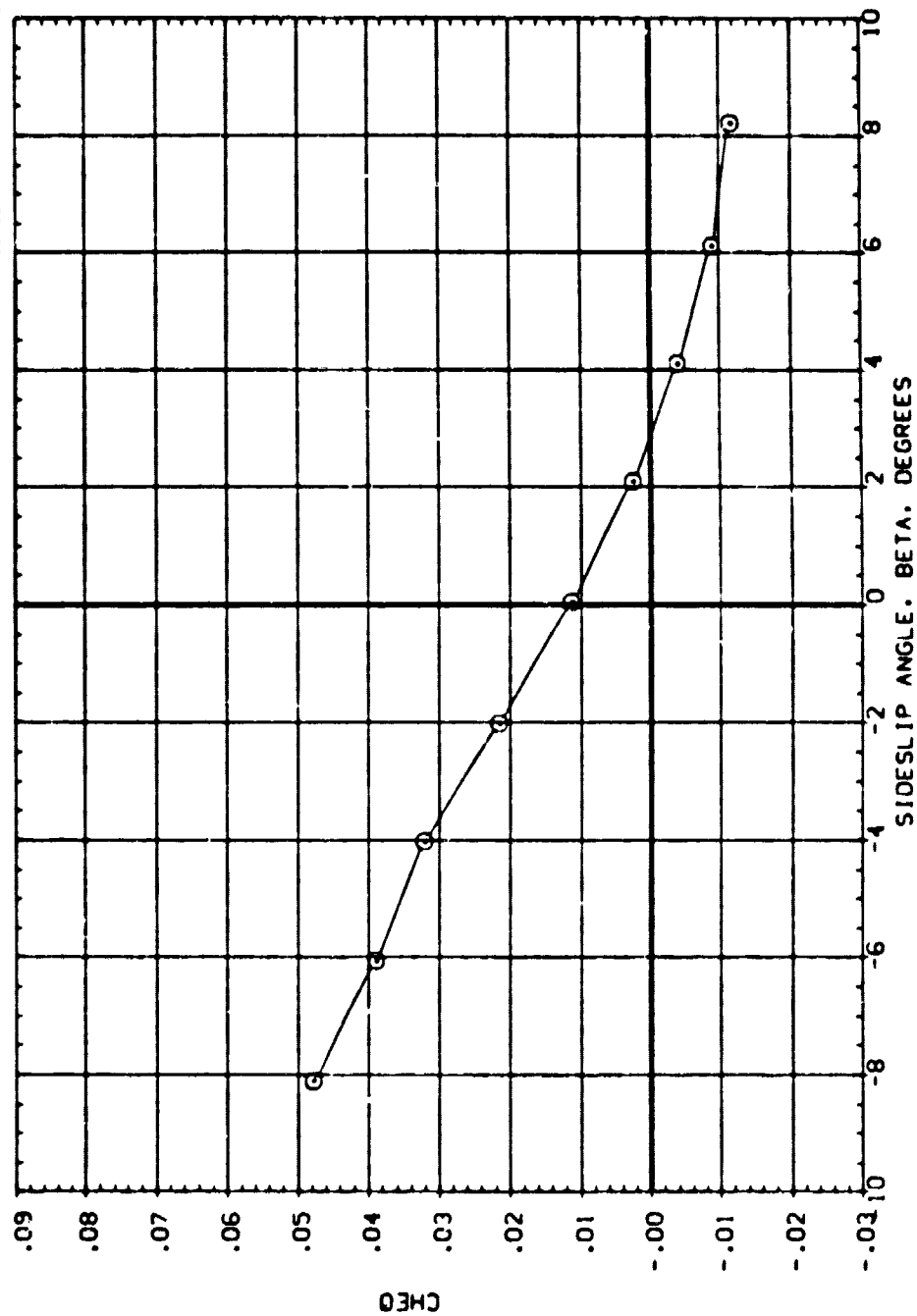
NET	6.150	IN.
LAT	5.1612	IN.
NET	3.7470	IN.
WAVE	2.7120	IN.
WAVE	.0000	IN.
WAVE	.0000	IN.
SCALE	.0000	PERIOD



LAUNCH VEHICLE BETA SWEEP

(C)MACH = 1.05

REFERENCE INFORMATION	
SREF	6.1580 IN.
LREF	5.1612 IN.
BREF	3.7470 IN.
WREF	2.7120 IN.
WREF	.0000 IN.
ZREF	.0000 IN.
SCALE	.0000 PERCENT

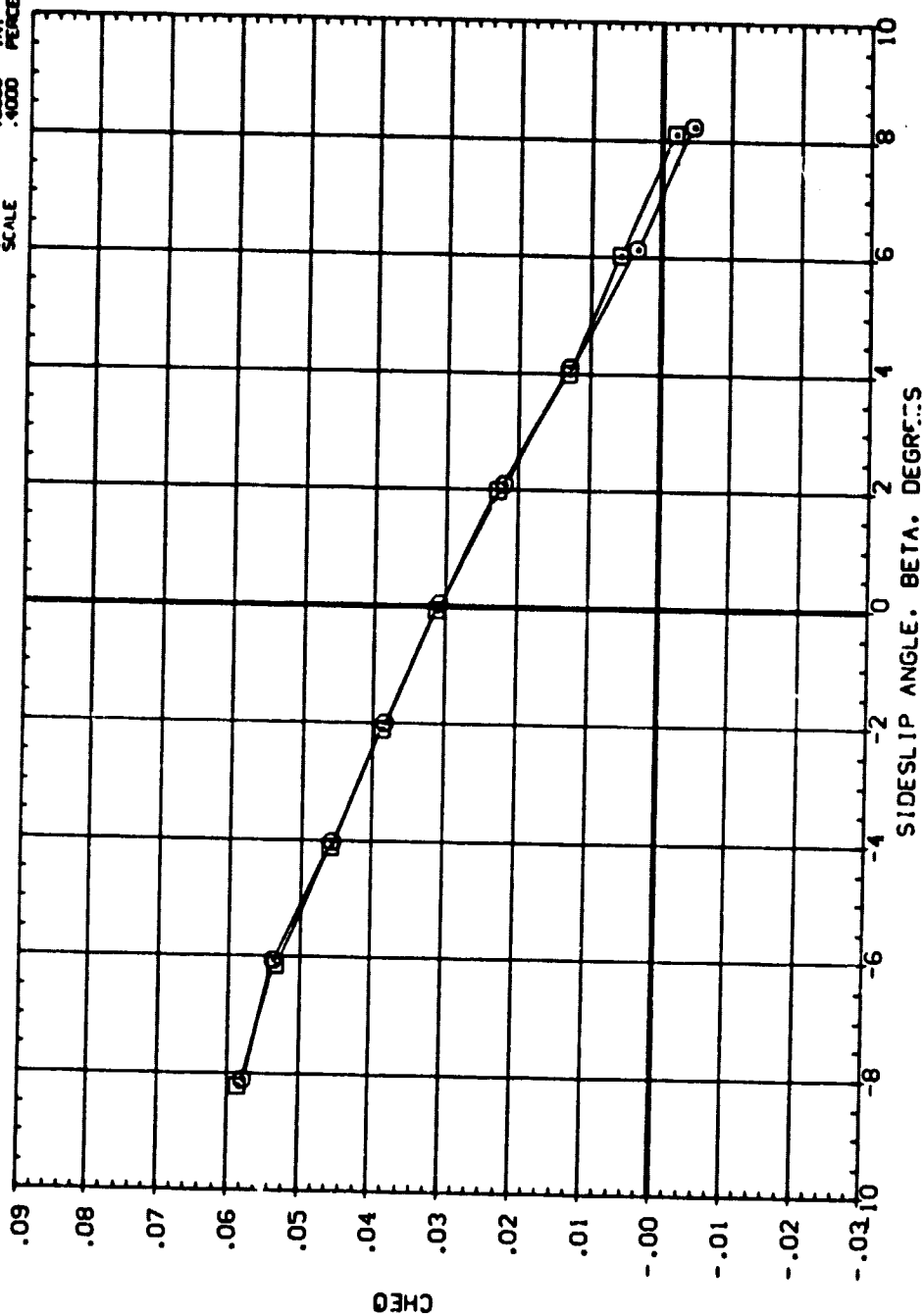


LAUNCH VEHICLE BETA SWEEP

$$(\text{O})\text{MACH} = 1.10$$

DATA SET SYMBOL: 8
 (FA2856) (FA2857)
 CONFIGURATION DESCRIPTION:
 FA28. MSC TVT 656. CONFIG. 02VZ2NNAAT1353
 FA28. MSC TVT 656. CONFIG. 02VZ2NNAAT1353

REFERENCE INFORMATION
 SHEET 8.1900 50. IN.
 LINE 3.1612 IN.
 SPREAD 2.7470 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

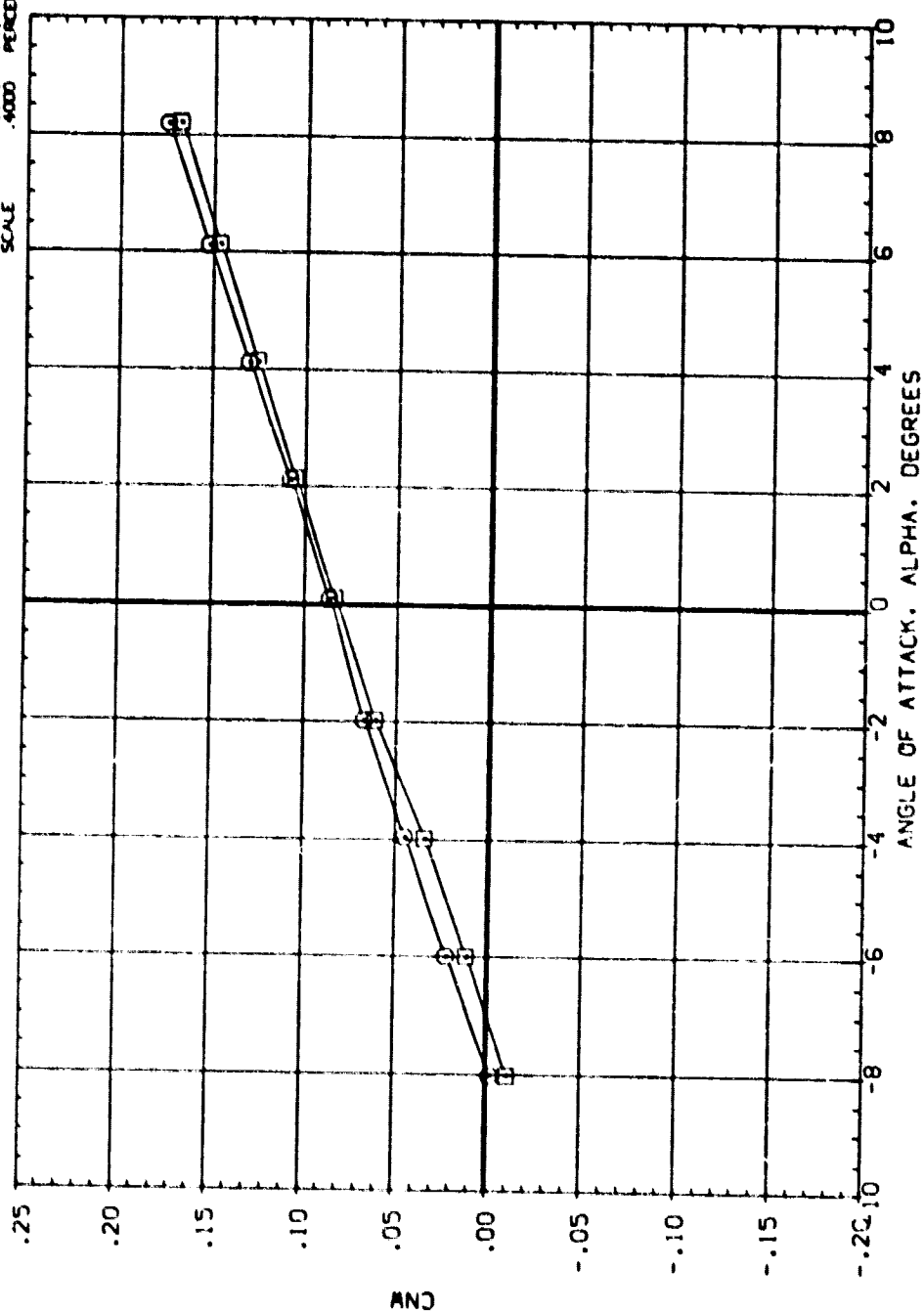


LAUNCH VEHICLE BETA SWEEP

(E)MACH = 1.25

DATA SET SYMBOL: (FA2055) (FA2056)
 CONFIGURATION DESCRIPTION: (FA2055) (FA2056)
 (FA2055) (FA2056)

REFERENCE INFORMATION
 SPEC 6.1900 50. IN
 LENS 3.1612 IN.
 BRIS 3.7470 IN.
 WARP 2.7120 IN.
 YARP .0000 IN.
 ZARP .0000 IN.
 SCALE .4000 PERCENT

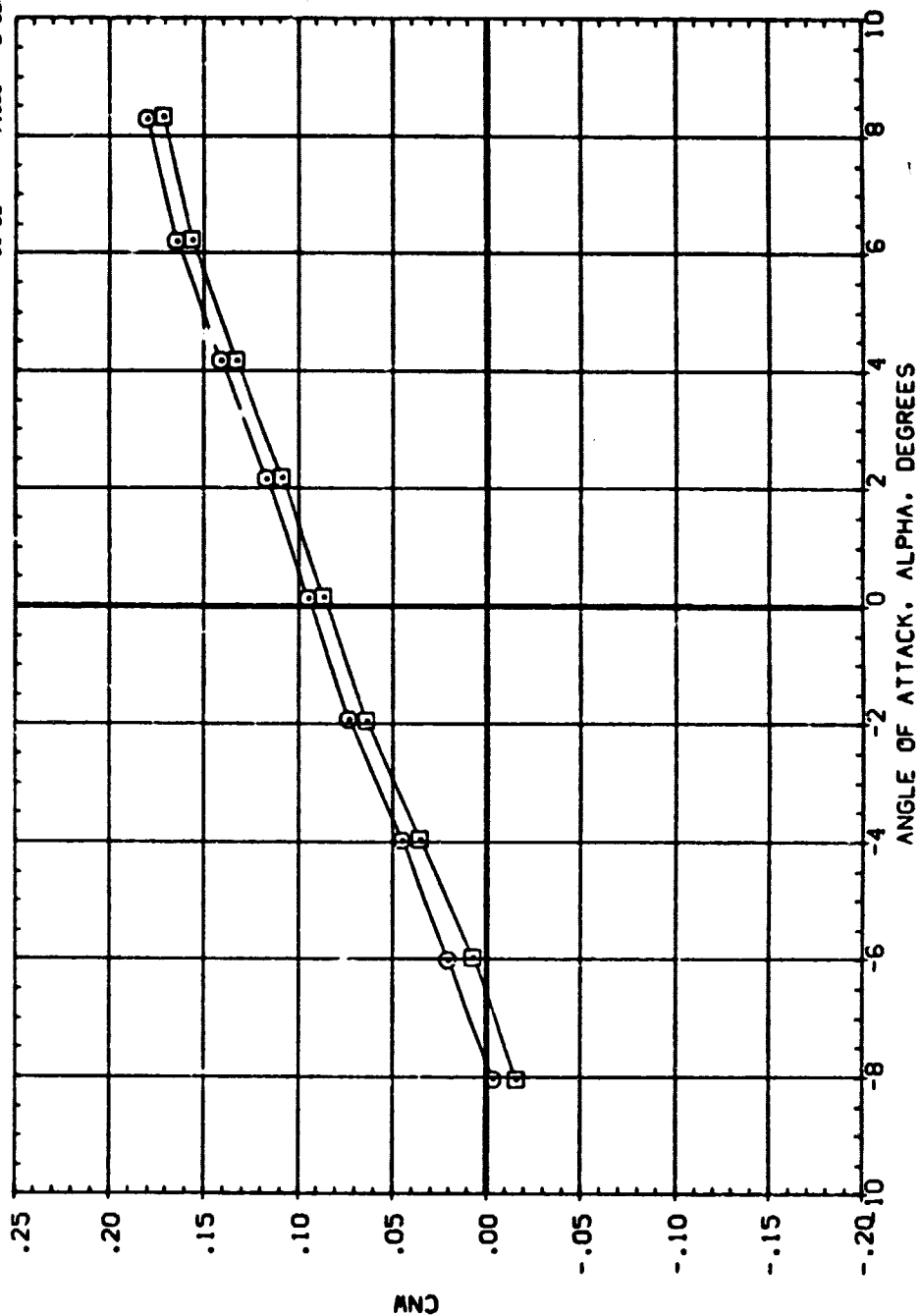


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2853) □ FA28. M5FC TVT 656. CONF IG. 02NZE20NPAAT153
 (FA2858) □ FA28. M5FC TVT 656. CONF IG. 02NZE20NPAAT153

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

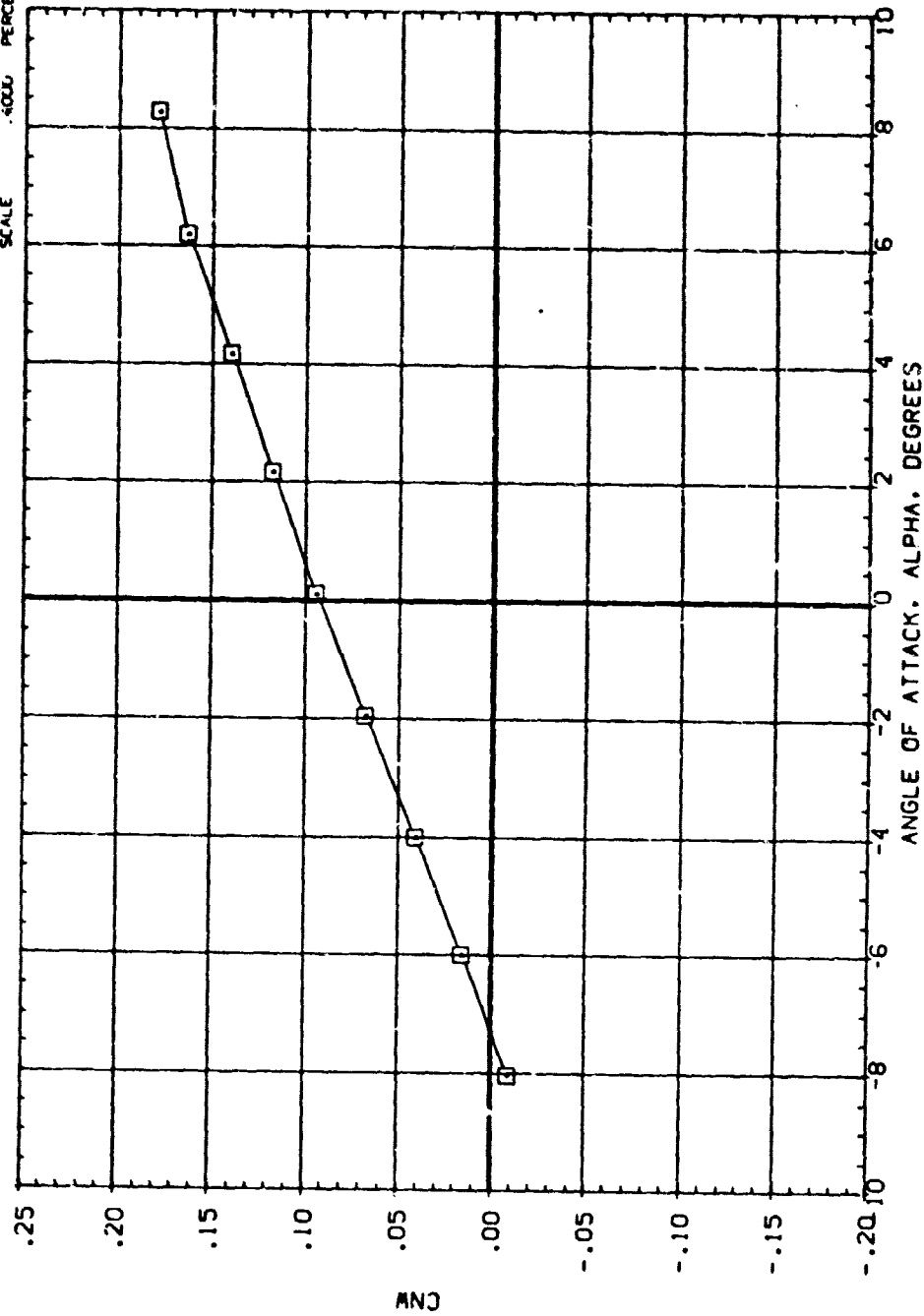


EFFECT OF ET PROTUBERANCES

(8)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2855) □ DATA NOT AVAILABLE
 (FA2856) □ FA28, M5FC TWT 656, CONFIG. 02UZE2PAPATT353

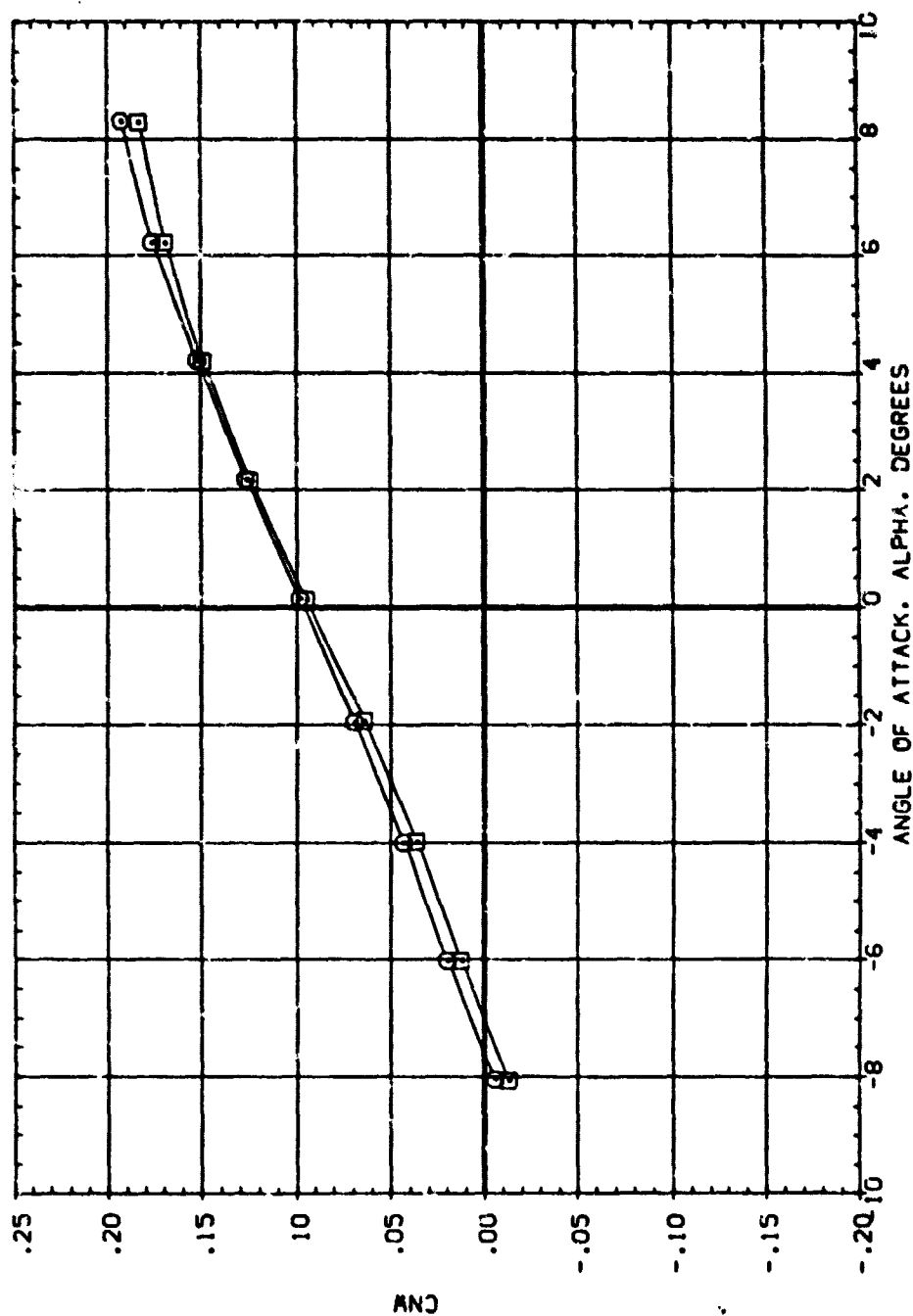
REFERENCE INFORMATION
 SREF 5.1800 SQ. IN.
 LREF 3.1512 IN.
 BREF 2.7912 IN.
 WREF 2.7120 IN.
 WAPP .0000 IN.
 ZAPP .0000 IN.
 SCALE .0000 PERCENT



EFFECT OF ET PROTUBERANCES

(C)MACH = .55

REFERENCE INFORMATION	
SHEET	6,580 IN.
DATE	5,1612 IN.
SCALE	3,7476 IN.
NO.	2,7120 IN.
1000	.0000 IN.
2000	.0000 IN.
SCALE	.0000 PERCENT

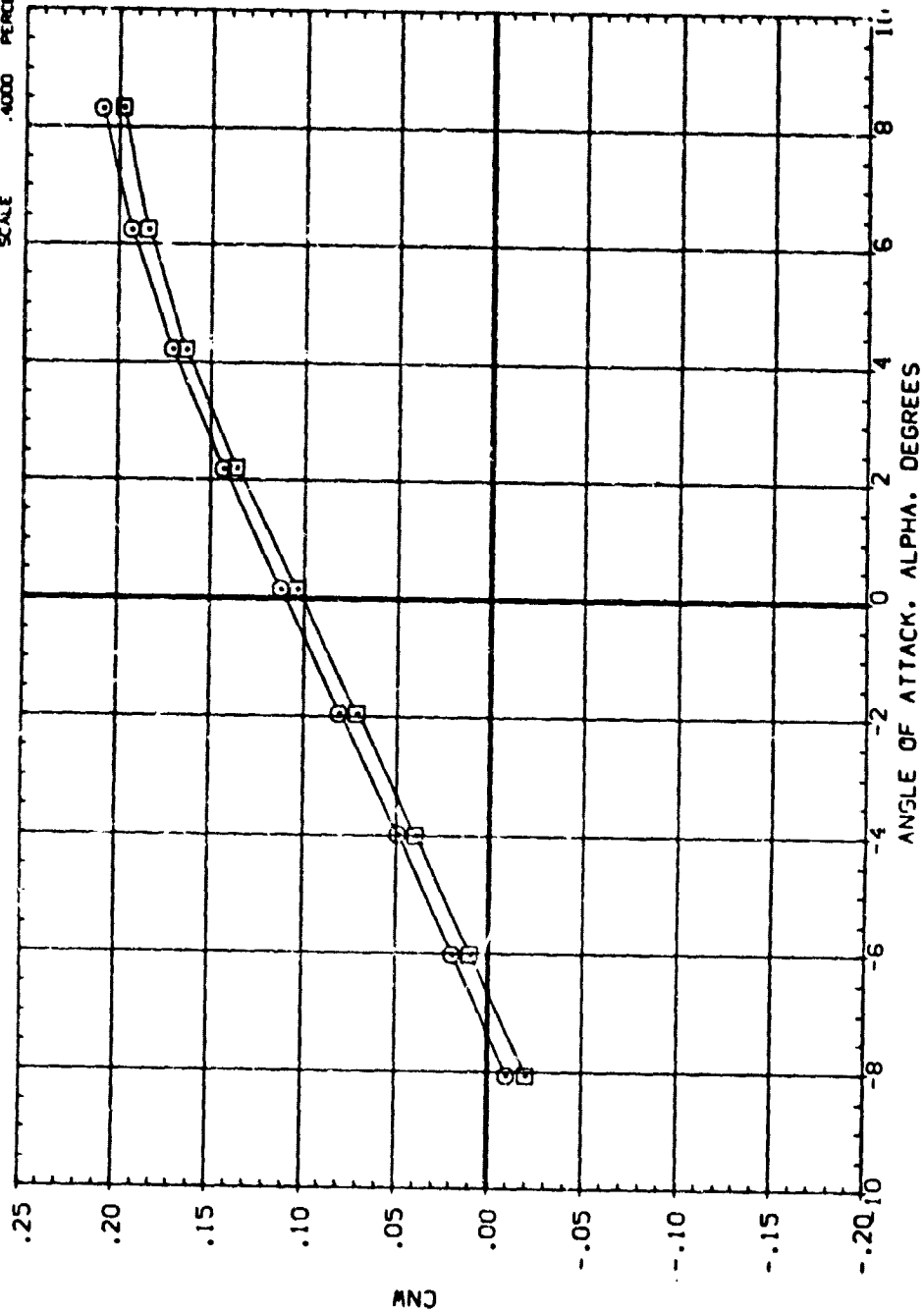


EFFECT OF ET PROTUBERANCES

{D)MACH = 1.05

DATA SET SYMBOL: (FA2055) (FA2056)
 CONFIGURATION DESCRIPTION: FA20: MSC TWT 536. COF 13. 02VZ 20WMA11353
 FA20: MSC TWT 636. COF 16. 02VZ 20WMA11353

REFERENCE INFORMATION
 SREF 6.1380 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

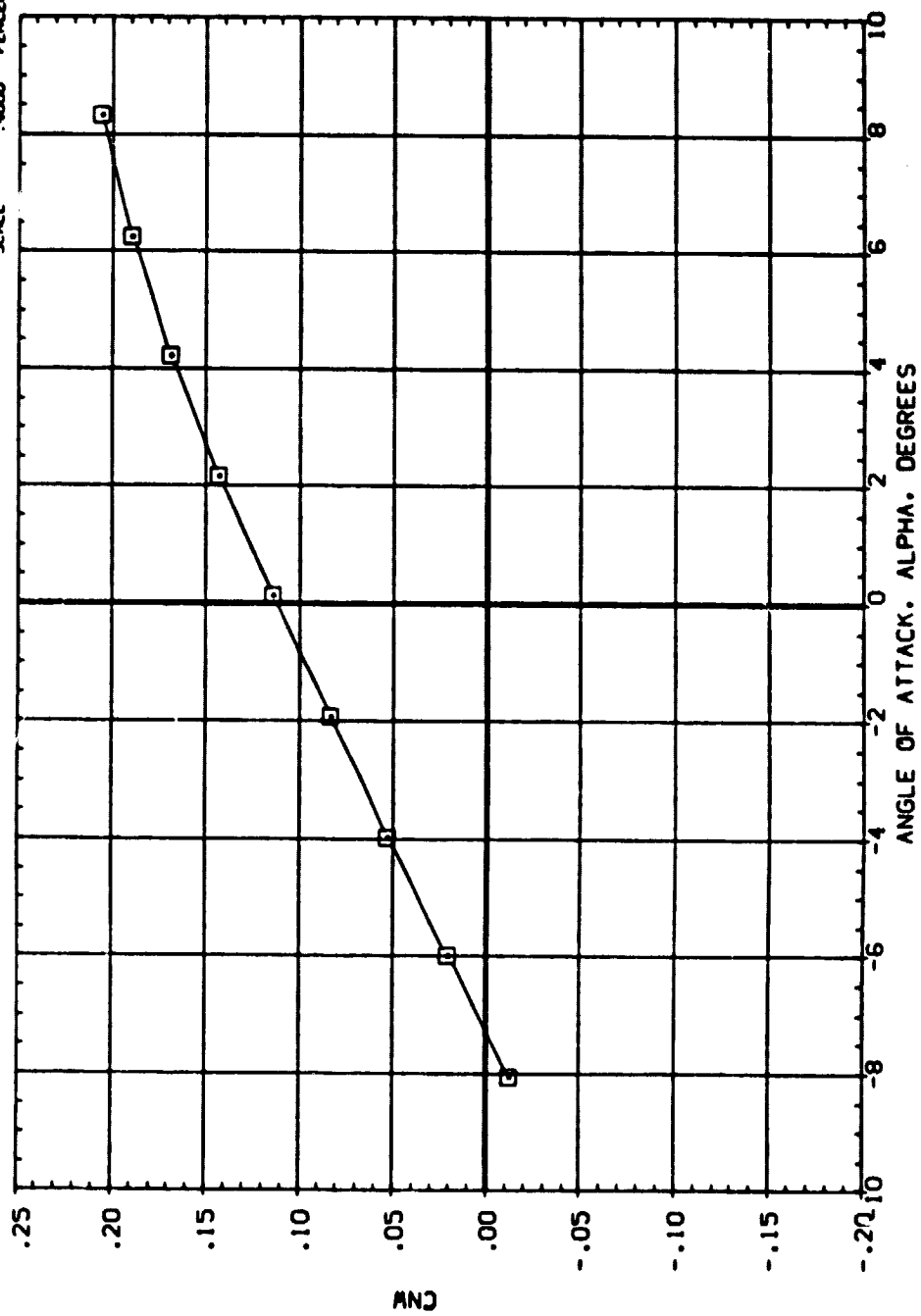


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.11

DATA SET SYMBOL: 00202E204PAA11353
 CONFIGURATION DESCRIPTION: DATA NOT AVAILABLE
 FA28. 155C TVT 656. CONF 1G. 00202E204PAA11353

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

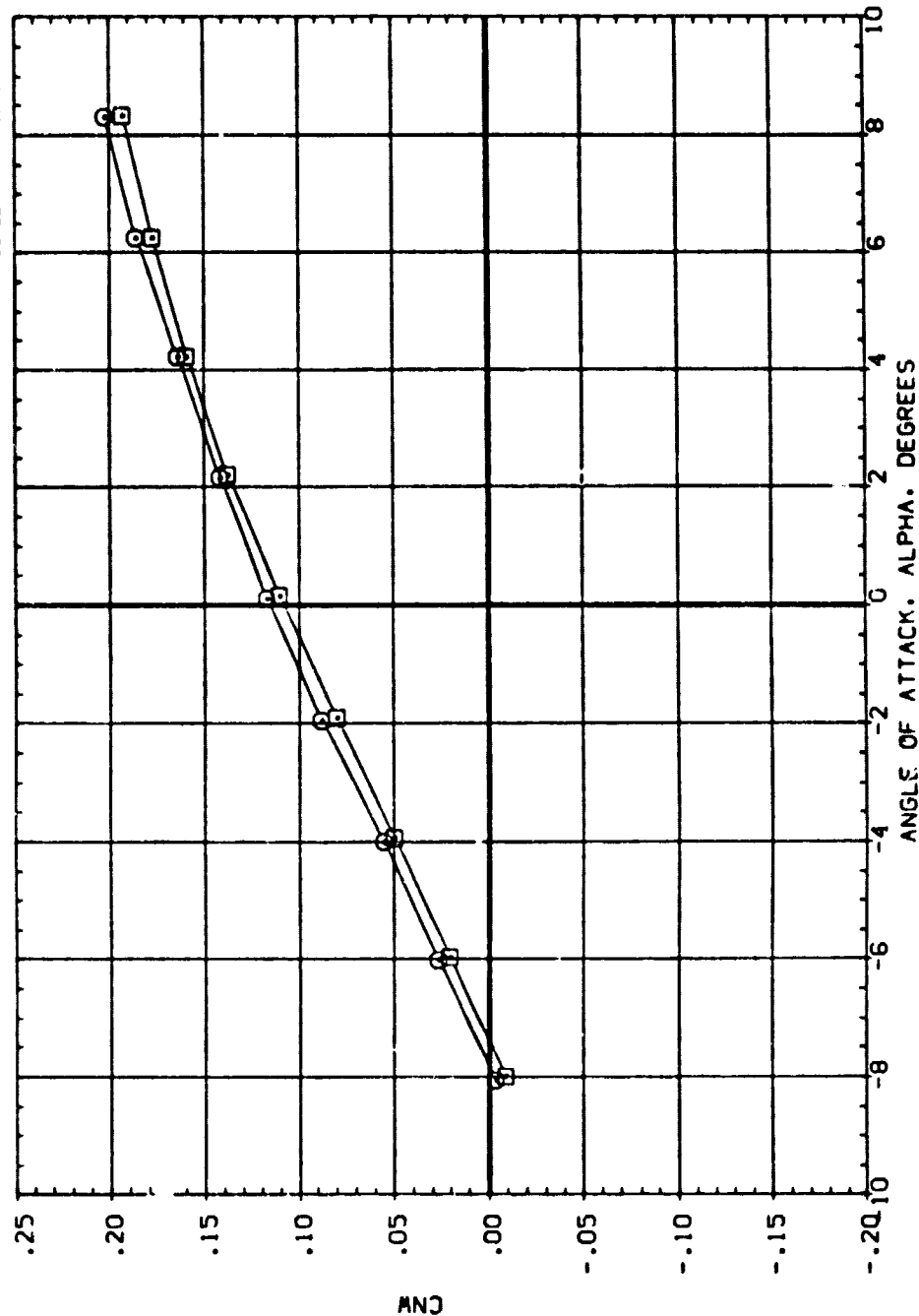


EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (FA2855) □ FA28. MSFC TVT 655. CONF IG. 02VZE200VAAT1353
 (FA2856) □ FA28. MSFC TVT 656. CONF IG. 02VZE200PAAT1353

REFERENCE INFORMATION
 SREF 6.1960 50. IN
 LREF 3.1612 IN.
 BREF 2.7470 IN.
 WREF .7120 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .1000 PERCENT

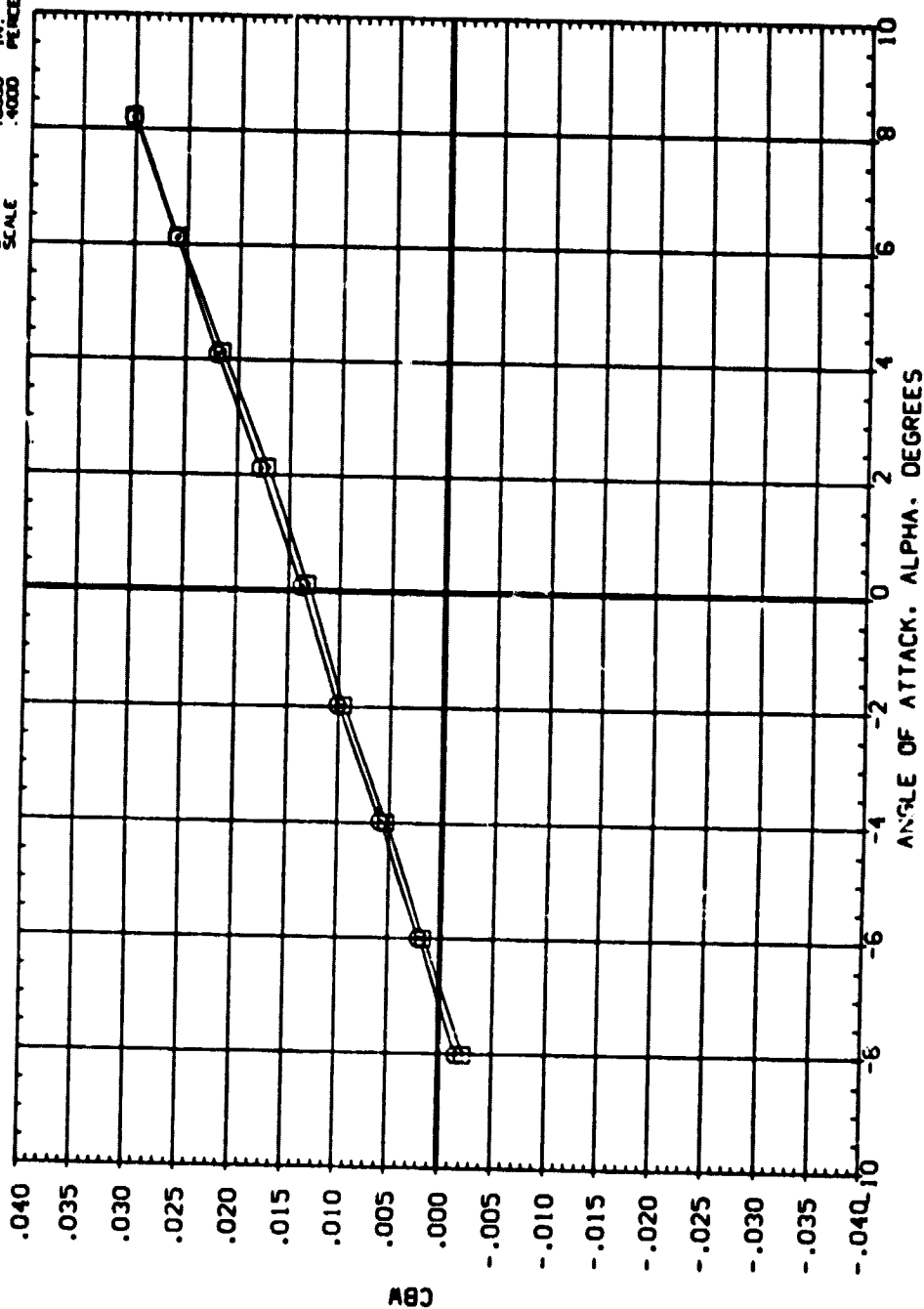


EFFECT OF ET PROTUBERANCES

(G)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2055) □ F20. MSC TWT 655. CONF IG. 02VZ20WAAAT1353
 (FA2056) □ F20. MSC TWT 656. CONF IG. 02VZ20WAAAT1353

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

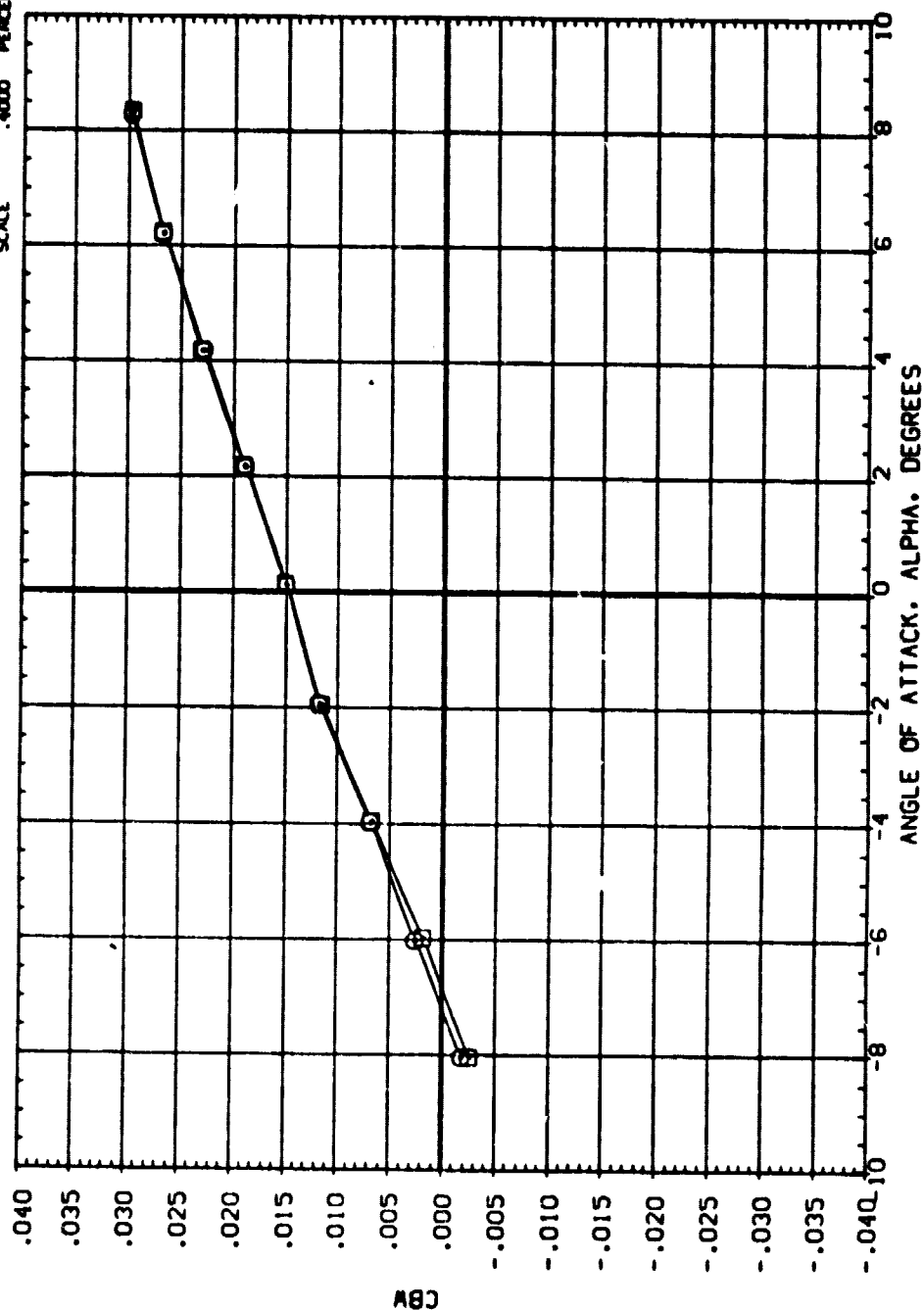


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: (FA2053) ☐ (FA2058)
 CONFIGURATION DESCRIPTION: FA20. MSFC TWT 656. CONF IS. 0242E20MAA11353
 FA20. MSFC TWT 656. CONF IS. 0242E20MAA11353

REFERENCE INFORMATION
 REF 6.1980 50. IN.
 LREF 3.1612 IN.
 BREF 2.7470 IN.
 WREF .0000 IN.
 TREF .0000 IN.
 SCALE .0000 PERCENT

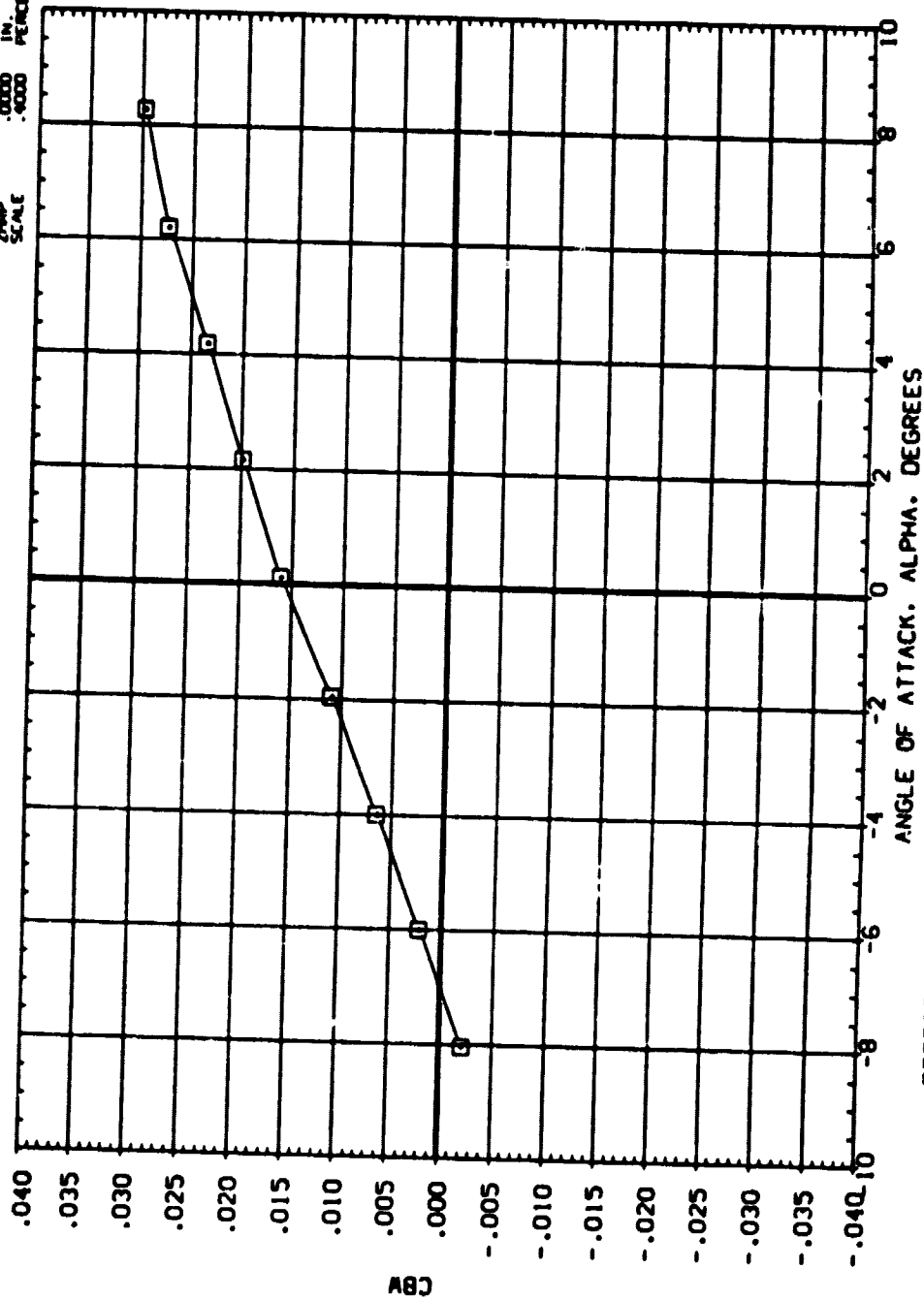


EFFECT OF ET PROTRUBERANCES

(B)MACH = .90

DATA SET 3786L CONFIGURATION DESCRIPTION
 (PAGES) DATA NOT AVAILABLE
 (PAGE) FA20. MSC TWT 555. CONFIG. 02VZ2P0ATT1353

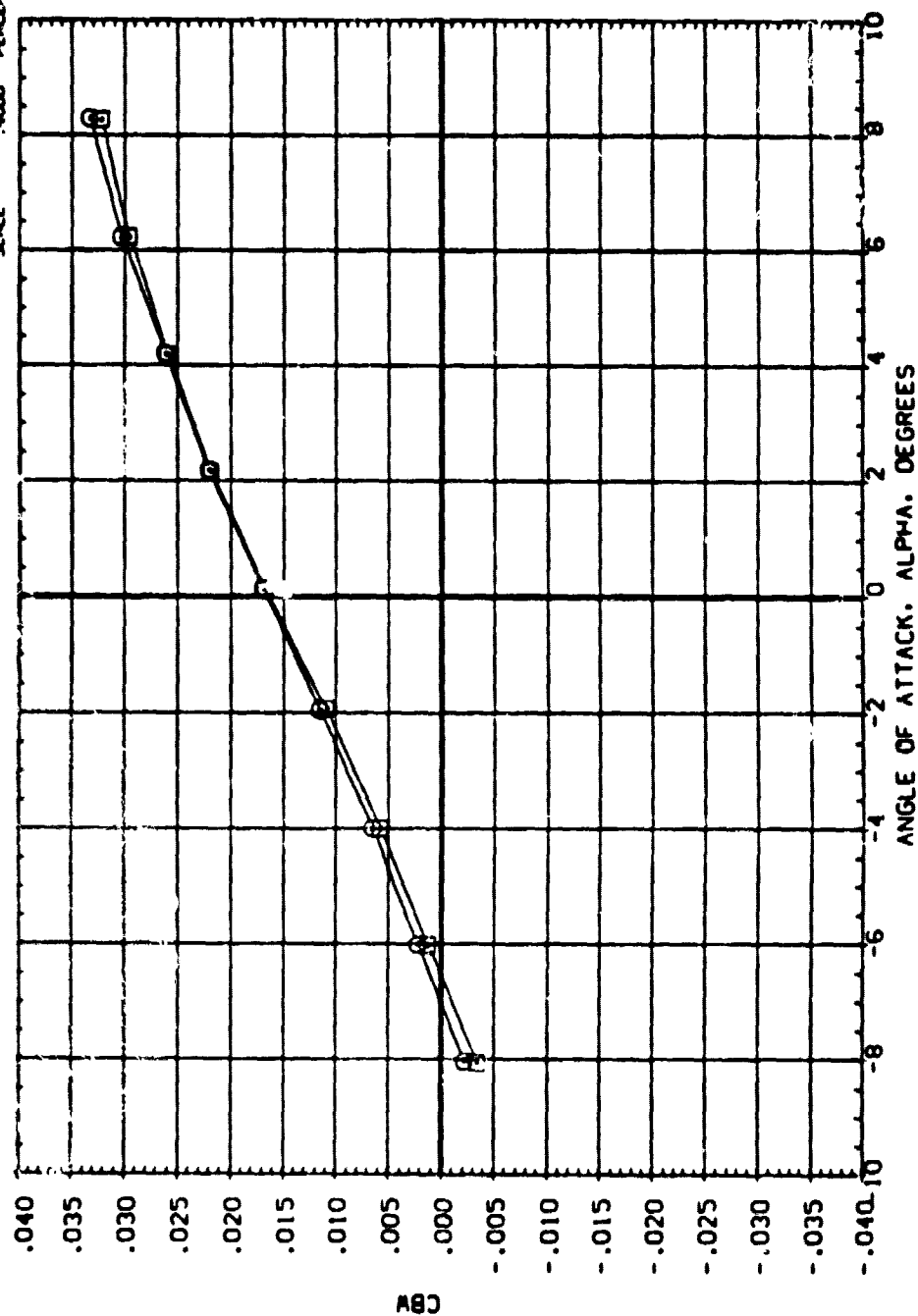
REFERENCE INFORMATION
 SREF 5.1580 IN. IN.
 LREF 5.1512 IN. IN.
 BREF 3.7470 IN. IN.
 YPROP 2.7120 IN. IN.
 ZPROP .0000 IN. IN.
 SCALE .4000 PERCENT



EFFECT OF ET PROTUBERANCES

(C)MACH = .95

REFERENCE INFORMATION	
REF	6.1980 IN.
LET	5.1612 IN.
REF	3.7470 IN.
REF	2.7120 IN.
REF	.0000 IN.
REF	.0000 IN.
SCALE	.0000 PERCENT

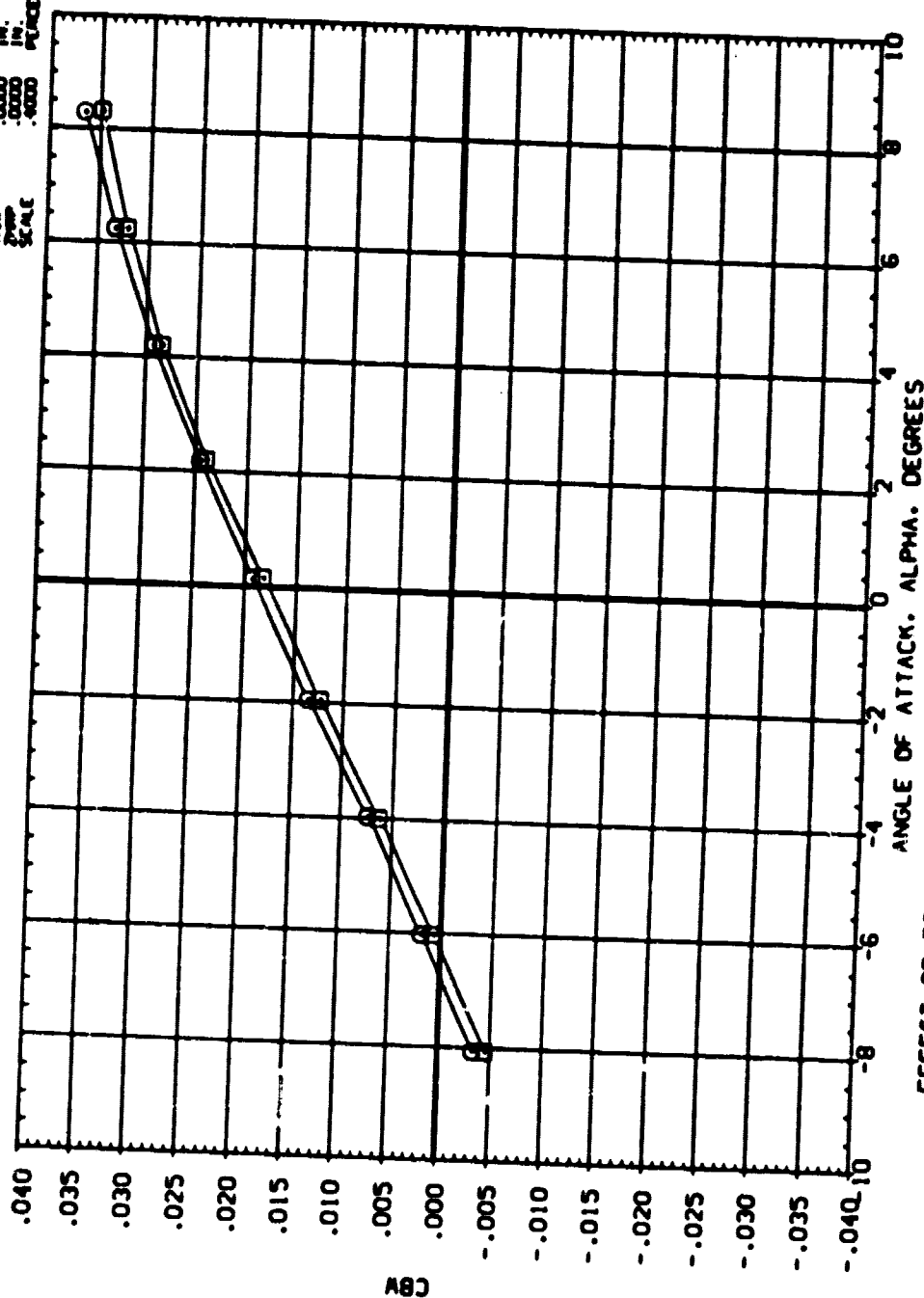


EFFECT OF ET PROTUBERANCES

(D)MACH = 1.05

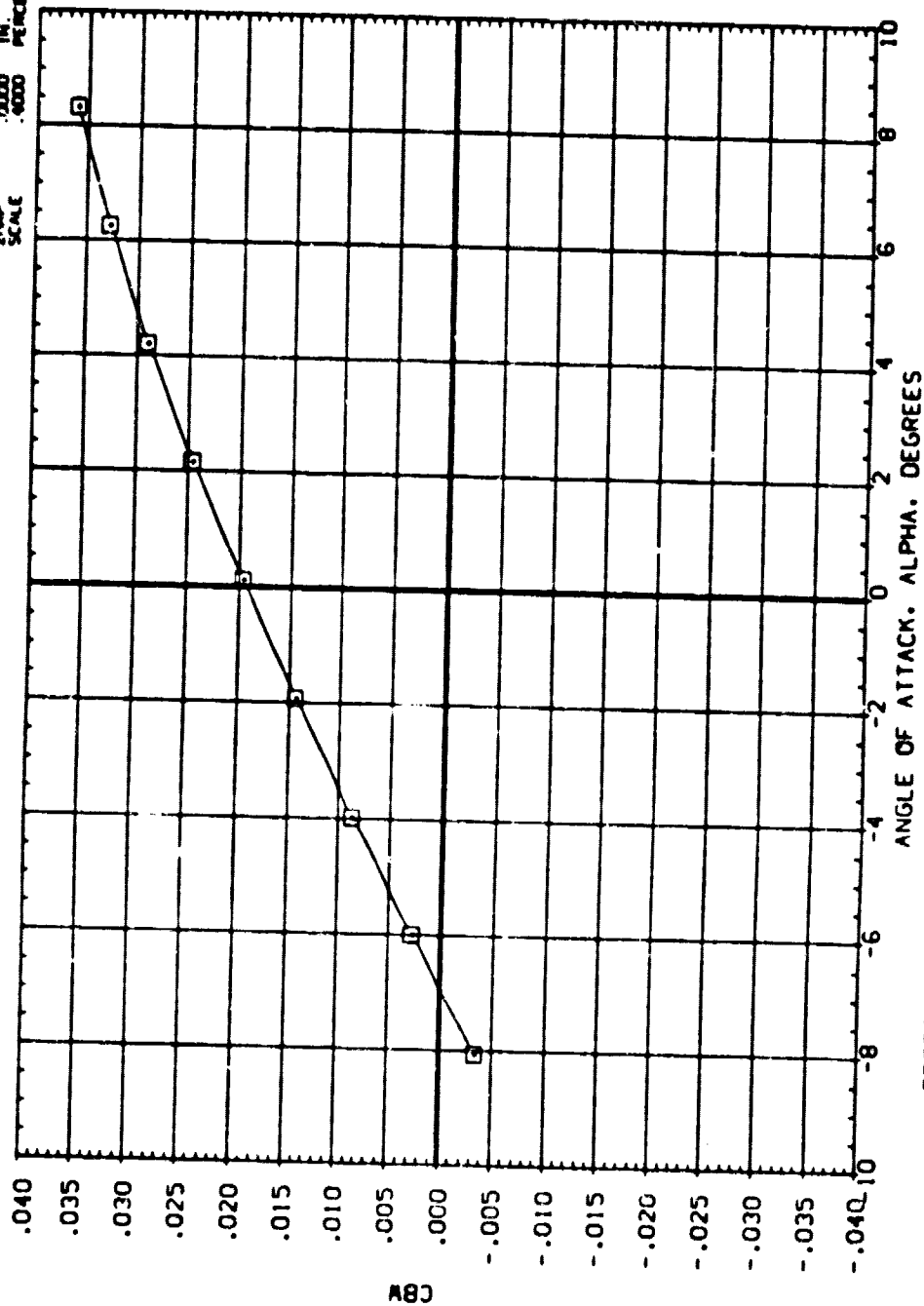
DATA SET SYMBOL	CONFIDANT IN DESCRIPTION	CONFIDANT IN DESCRIPTION
(F4205)	FA20. MOST INT GNS.	CONF. 16.
(F4205)	FA20. MOST INT GNS.	CONF. 16.

SURV	6,980	IN
LIFE	3,1612	IN.
DEATH	2,7470	IN.
MARR	2,7120	IN.
DIVORCE	.0000	IN.
REMAR	.0000	IN.
TOTAL	.4000	PURCHAS




DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2953) DATA NOT AVAILABLE
 (FA2958) FA29. MSC TWT 656. CONFIG. 02123200A117353

REFERENCE INFORMATION
 SHEET 6.1580 SQ. IN.
 LINEF 5.1612 IN.
 SHEET 3.7470 IN.
 SHIP 2.7120 IN.
 THICK .0000 IN.
 SCALE .0000 PERCENT

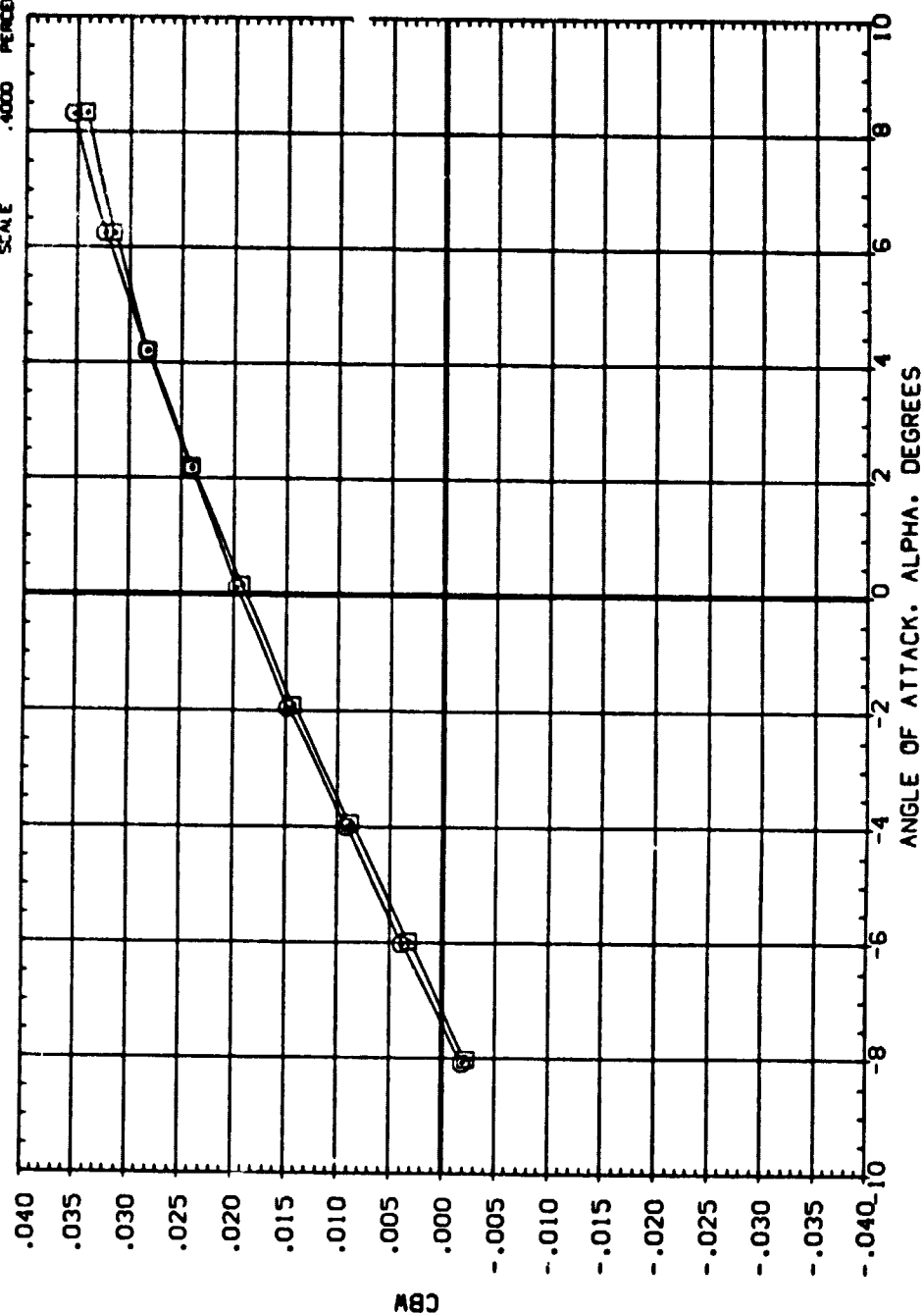


EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15

DATA SET SYMBOL: (FA2055)
 (FA2058)  FA20: MSFC TWT 656: CONF 16: 02VZ2PMAAT1753
 FA20: MSFC TWT 656: CONF 16: 02VZ2PMAAT1753

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

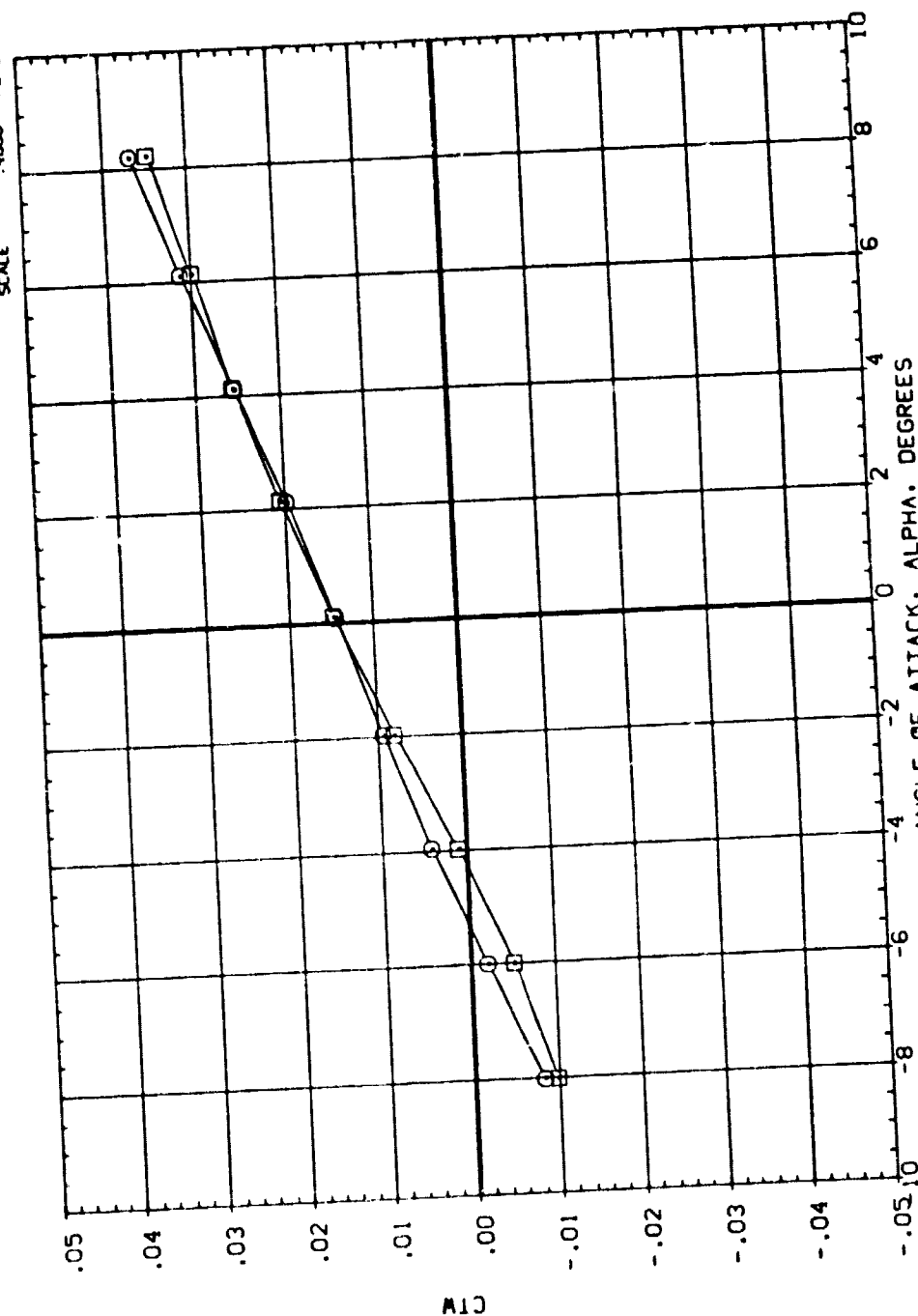


EFFECT OF ET PROTUBERANCES

(G)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2655) □ FA28. MSFC TWT 656. CONF 16. 02VZE20NPAAT1353
 (FA2658) □ FA28. MSFC TWT 656. CONF 16. 02VZE20NPAAT1353

REFERENCE INFORMATION
 SREF 6.1560 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

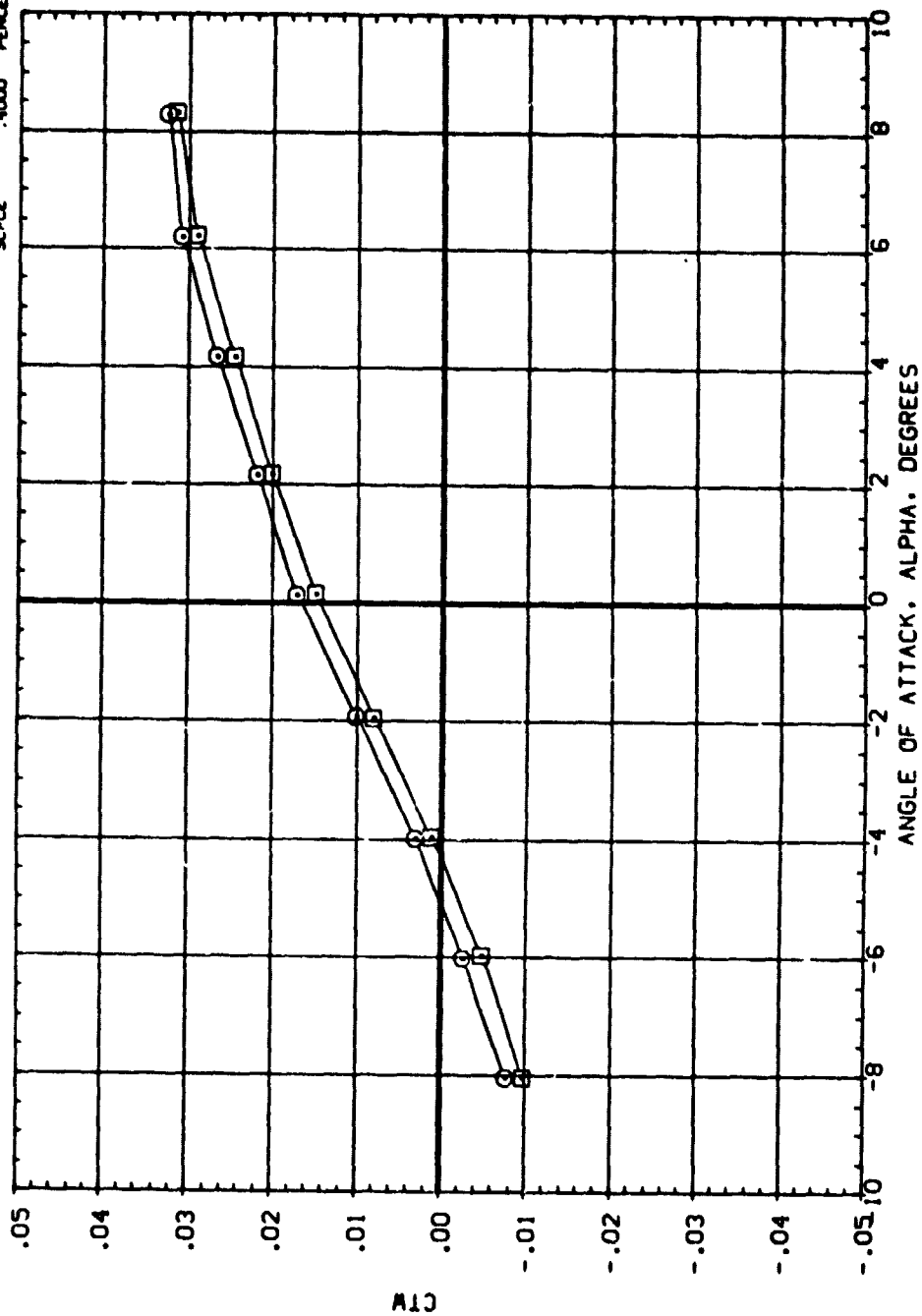


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2855) □ FA28. MSC TVT 656. CONFIG. 02NZE20MAATT353
 (FA2858) □ FA28. MSC TVT 656. CONFIG. 02NZE20MAATT353

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0700 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

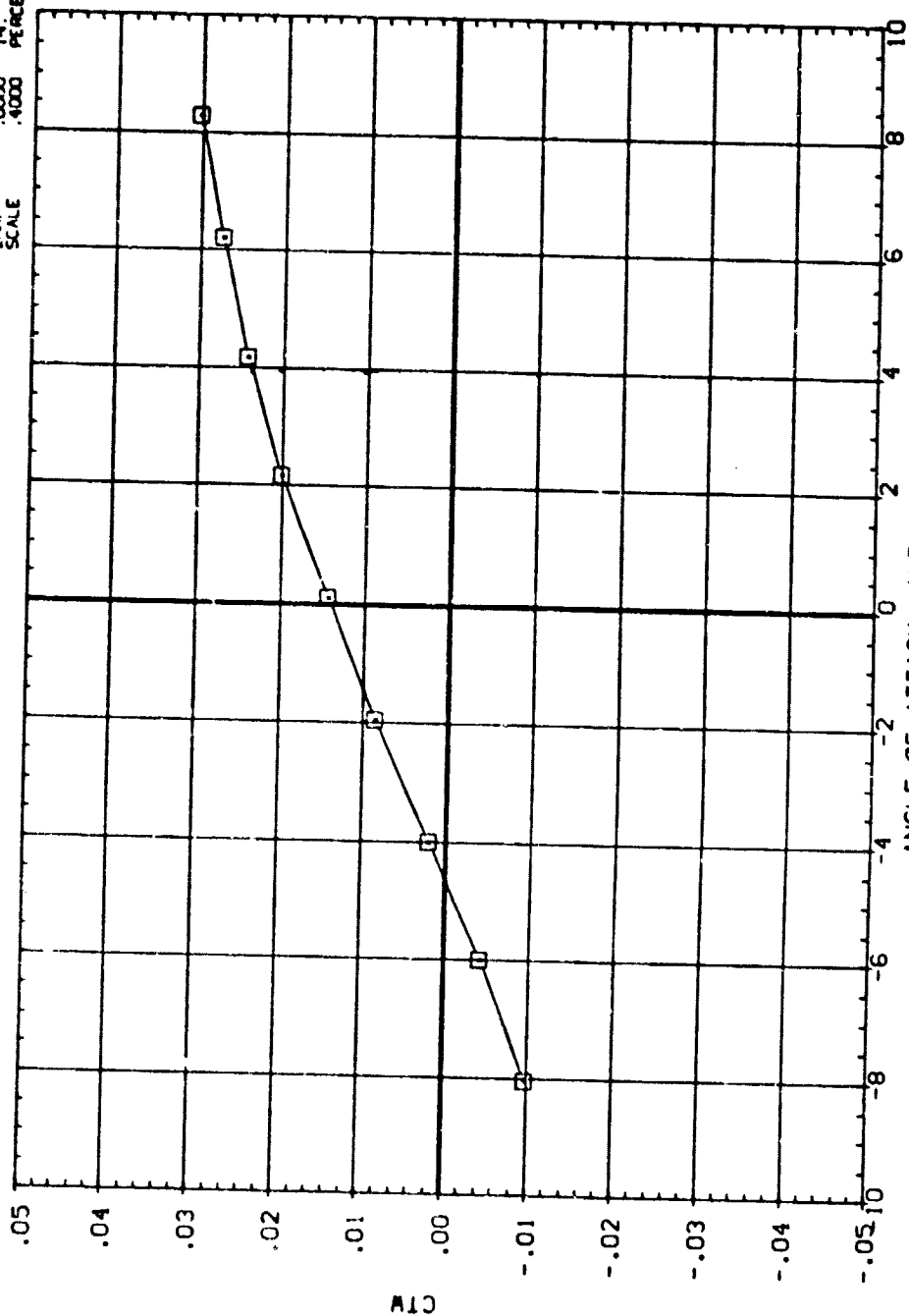


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2855) DATA NOT AVAILABLE
 (FA2858) PACH. HSC TVT 656, CONFIG. 02VZ2PAPAATT353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.3120 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

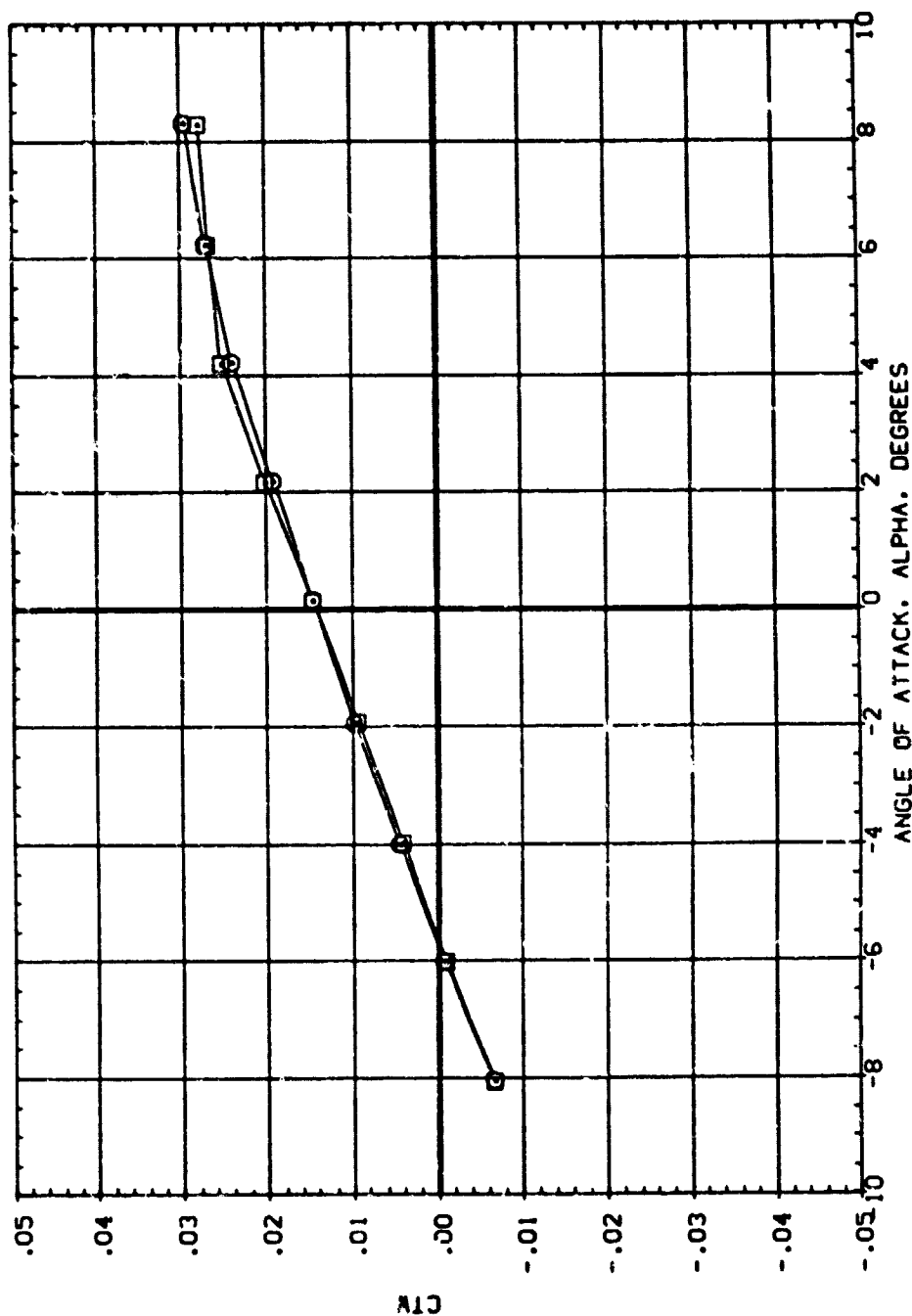


EFFECT OF ET PROTUBERANCES

(C)MACH = .95

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2053) □ FA28. MSFC TVT 656. CONF 10. C2NZE2MAAATT33
 (FA2058) □ FA28. MSFC TVT 656. CONF 10. C2NZE2MAAATT33

REFERENCE INFORMATION
 SPEC 6.1880 SQ. IN.
 LREF 3.1613 IN.
 SPEC 3.7170 IN.
 WAPP 2.7120 IN.
 WAPP .0000 IN.
 SCALE .0000 PERCENT

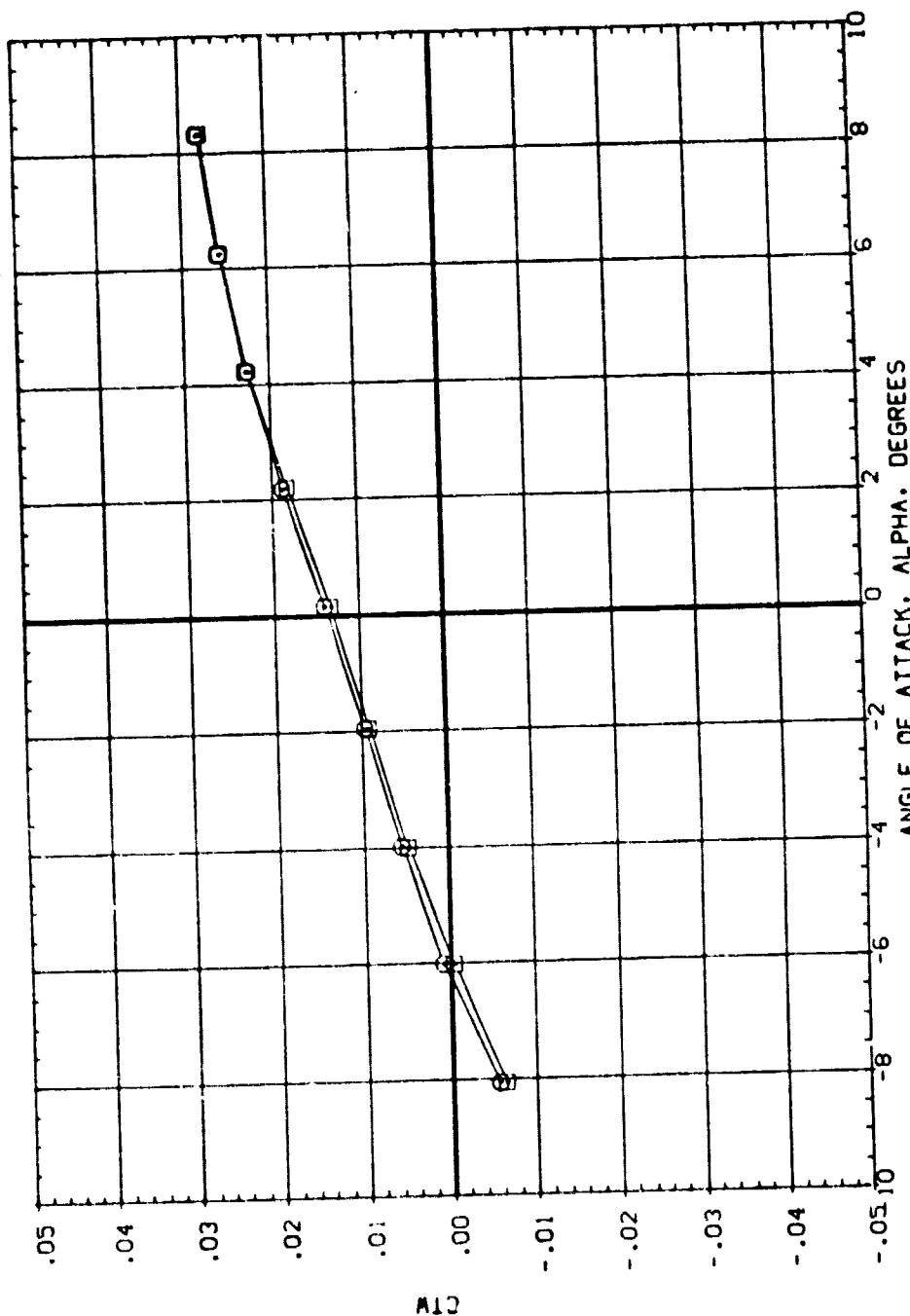


EFFECT OF ET PROTUBERANCES

(O)MACH = 1.05

REFERENCE INFORMATION
 SREF 5.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP .0000 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2855) □ FA28. MSFC 147 656. CONF IG. 02VZ20VAAAT1353
 (FA2856) □ FA28. MSFC 147 656. CONF IG. 02VZ20VAAAT1353

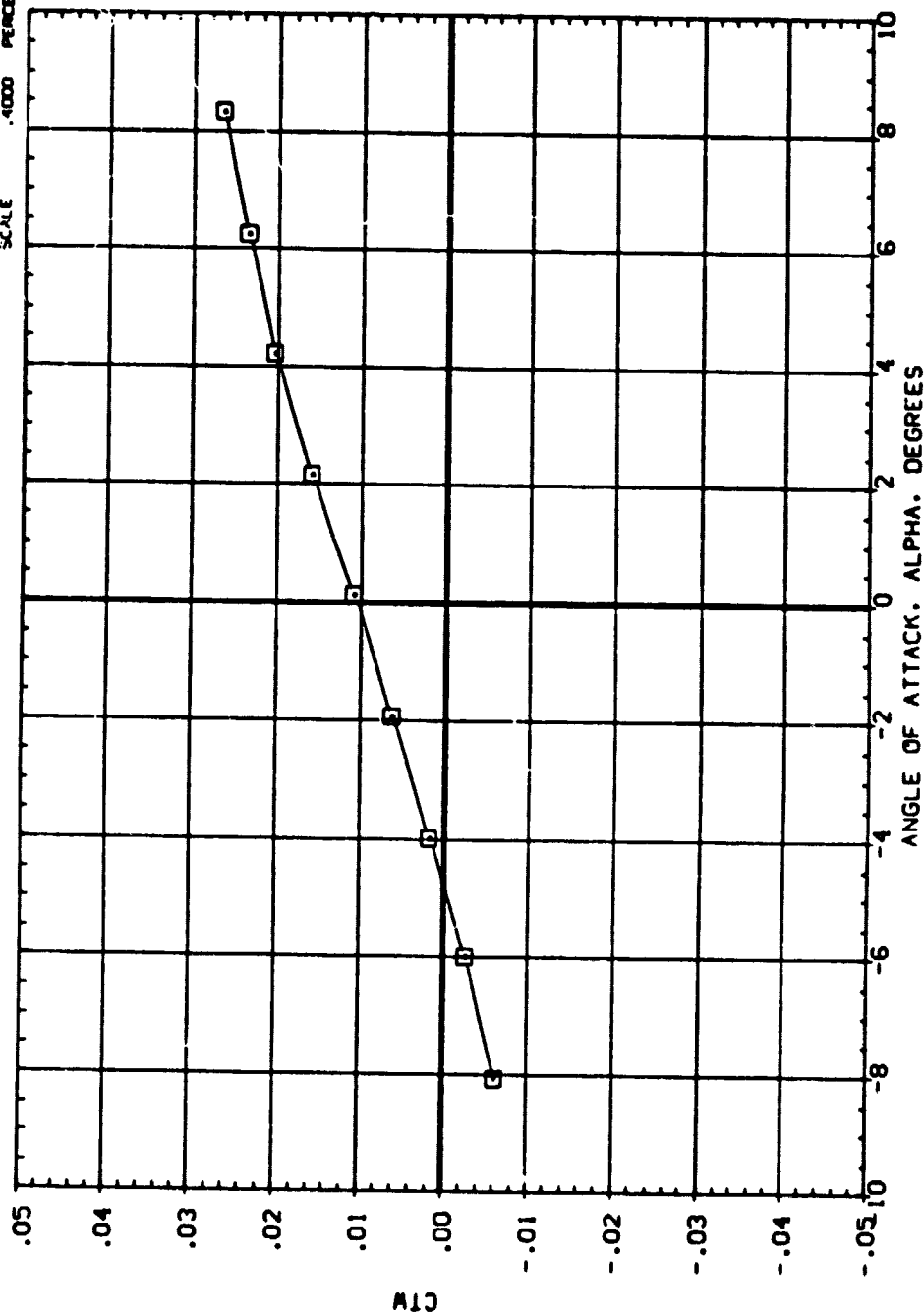


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.11

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2053) DATA NOT AVAILABLE
 (FA2056) FA20. MSC TWT 656. CONF IG. 02V2E2PAPAA11353

REFERENCE INFORMATION
 SREF 6.1800 SQ. IN
 LREF 2.1812 IN.
 BREF 2.1870 IN.
 YREF 2.7120 IN.
 XREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

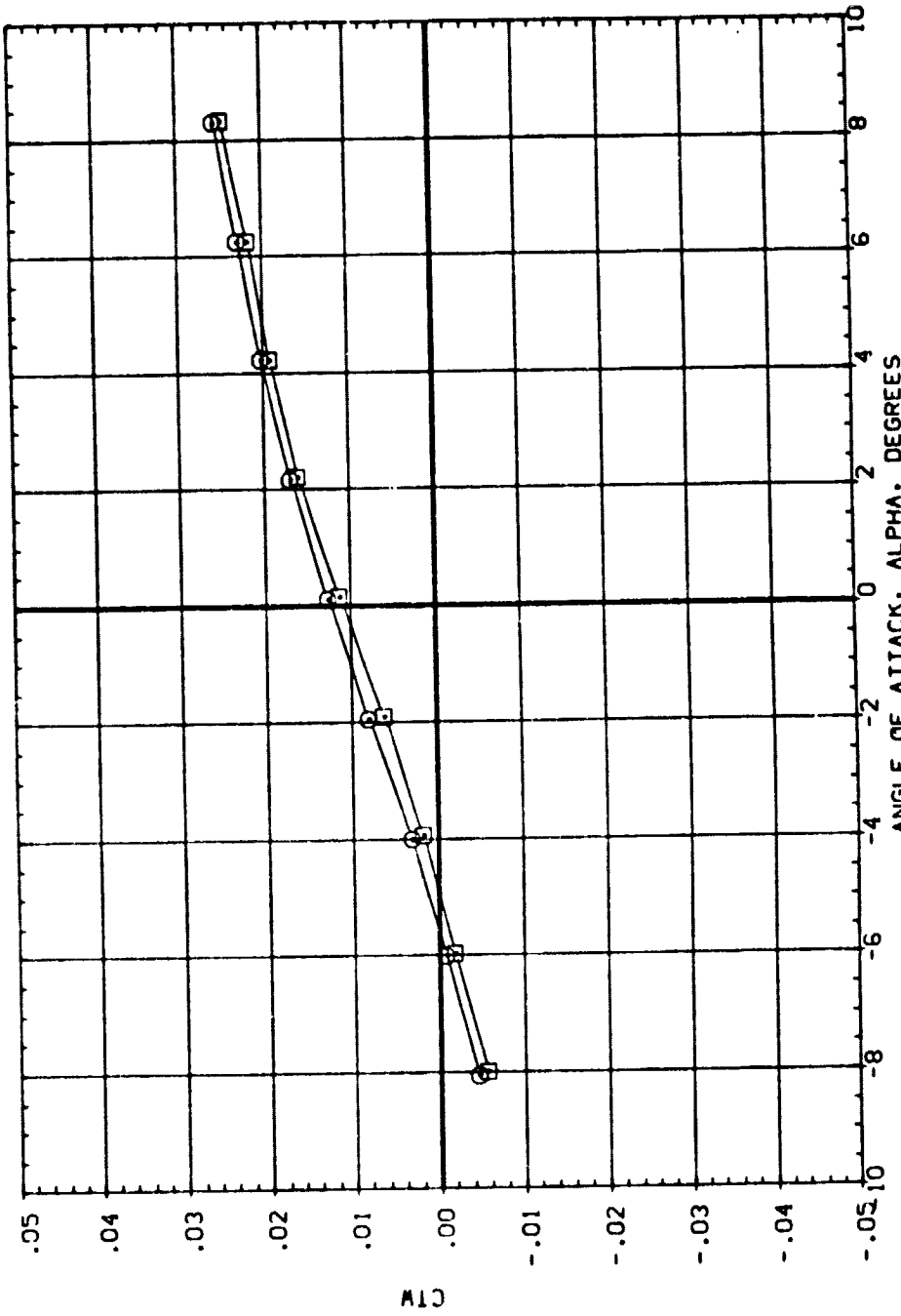


EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15

DATA SET SYMBOL: (FA2053)
 (FA2053) FA20: MSFC TVT 656: CONF 10: 07NZE20MAAT1353
 (FA2053) FA20: MSFC TVT 656: CONF 10: 07NZE20MAAT1353

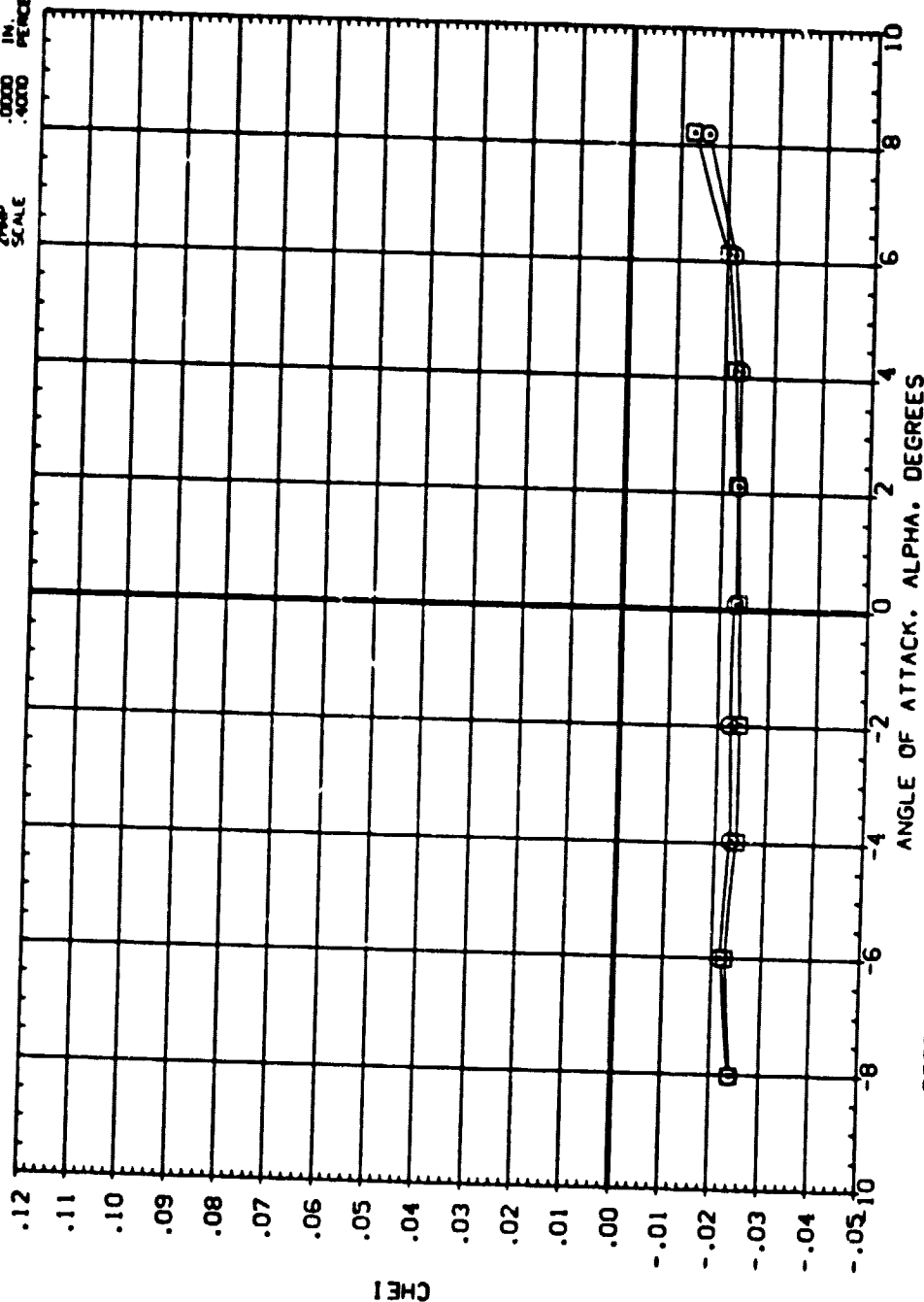
REFERENCE INFORMATION
 SREF 5.1980 SU. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YARP 2.7120 IN.
 YARP .0000 IN.
 ZARP .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF ET PROTUBERANCES
 (G)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2825) 8 FA28. MSFC TUT 656. CONFIG. QNZE 200A117353
 (FA2825) 8 FA28. MSFC TUT 656. CONFIG. QNZE 200A117353

REFERENCE INFORMATION
 SREF 8.1280 80. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0010 PERCENT



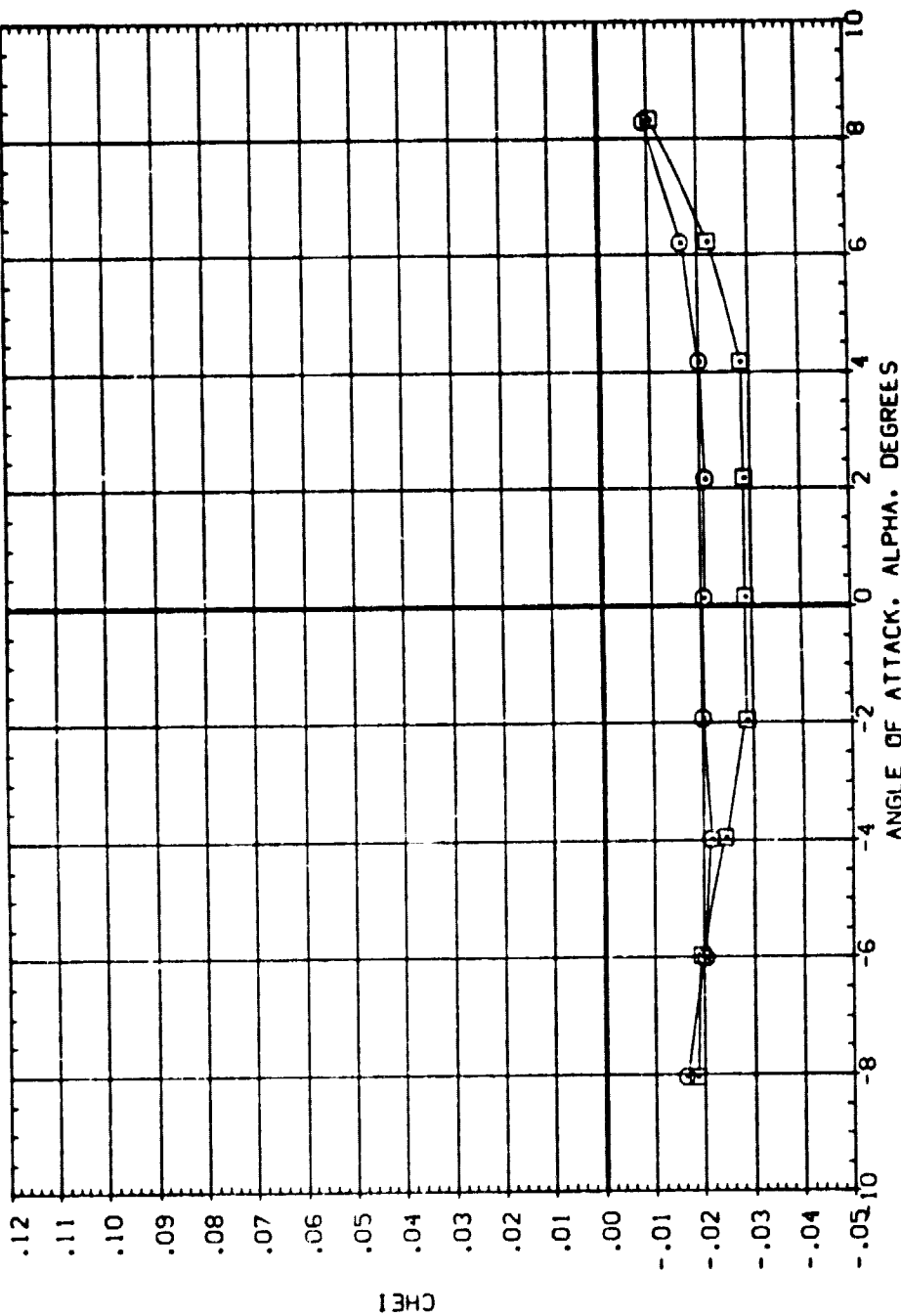
EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: 8
 (FA2855)
 (FA2858)

CONFIGURATION DESCRIPTION
 FA28: MSFC TVT 656; CONF IG. 02V2E2MMAATT353
 FA28: MSFC TVT 656; CONF IG. 02V2E2MMAATT353

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BRFL 2.7470 IN.
 YARP 2.7120 IN.
 ZARP .0000 IN.
 SCALE .4000 PERCENT

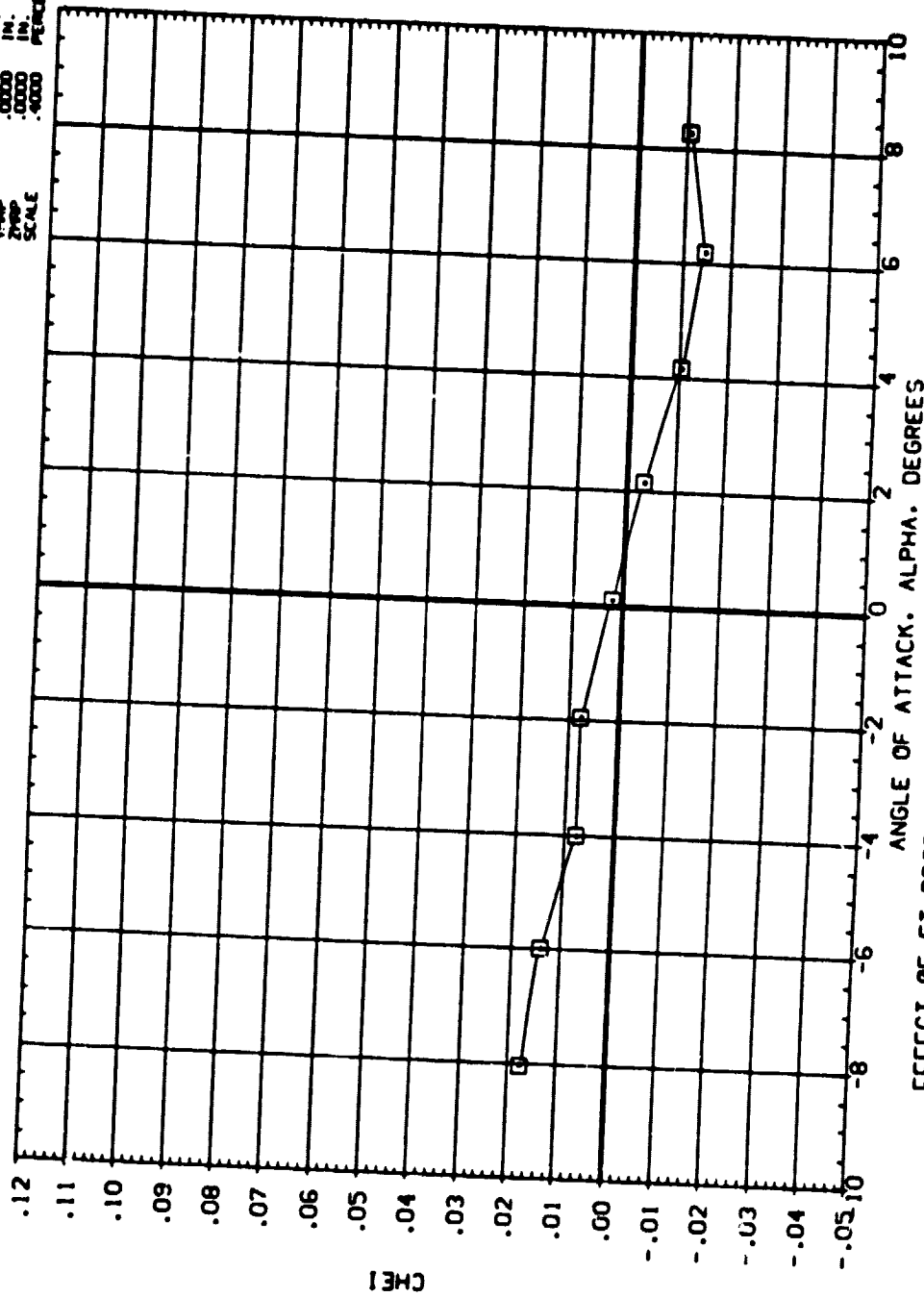


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL: 0
 CONFIGURATION DESCRIPTION: DATA NOT AVAILABLE
 (FA2855) (FA2858) FA28. MSC TVI 856. CONF 10. 02V2E2MPAA1T353

REFERENCE INFORMATION
 SREF 5.1880 50. IN.
 LREF 5.1812 IN.
 BREF 2.7170 IN.
 VREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERIOD

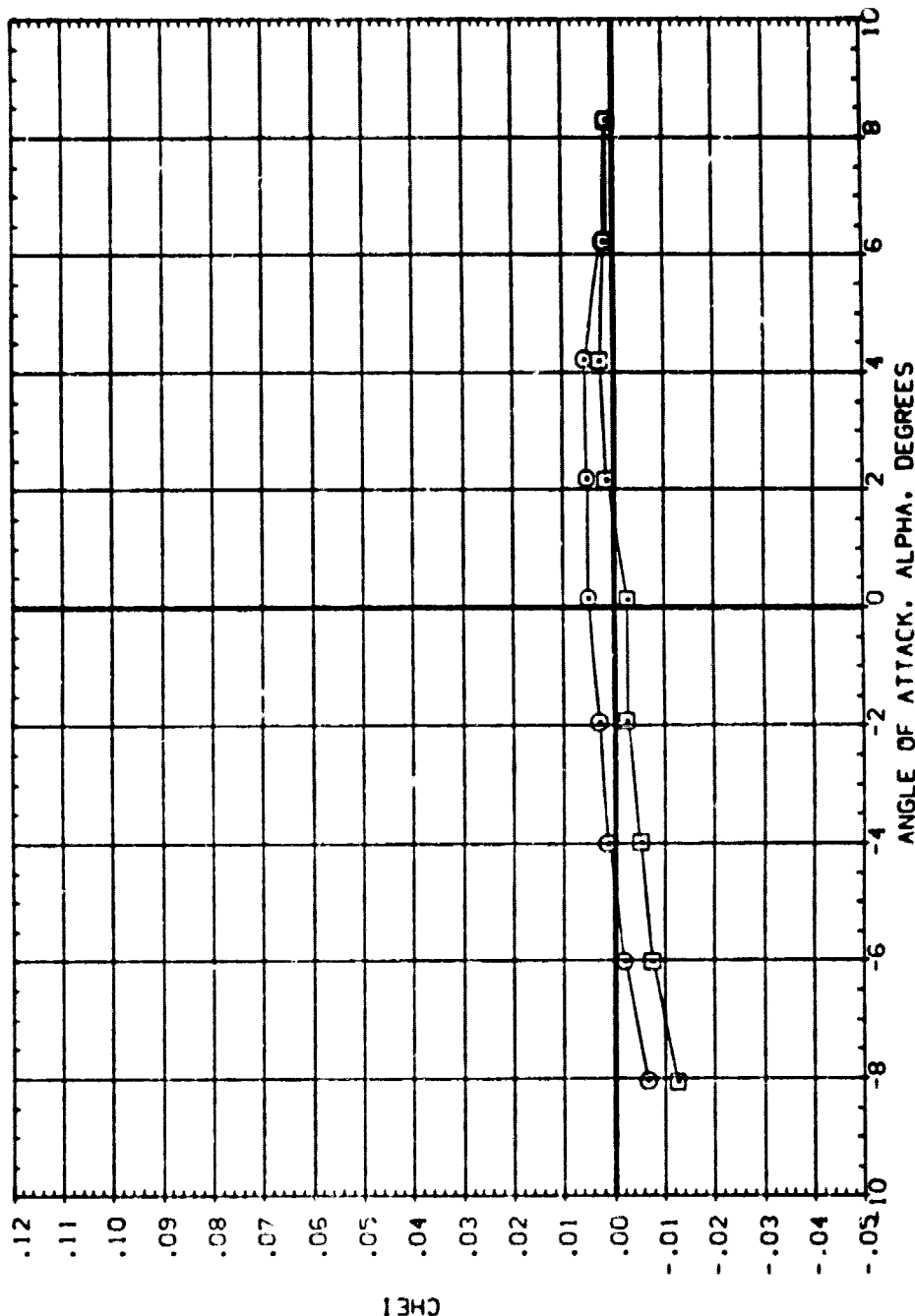


EFFECT OF ET PROTUBERANCES

(C)MACH = .95

DATA SET SYMBOL: (FA2055) B
 CONFIGURATION DESCRIPTION: FA20: MSFC TVT 656: CONF 1G. Q2V2E: Z00NAA11353
 FA20: MSFC TVT 656: CONF 1G. Q2V2E: Z00NPA11353

REFERENCE INFORMATION
 SREF: 6.1580 IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 WREF: 2.7120 IN.
 ZREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT

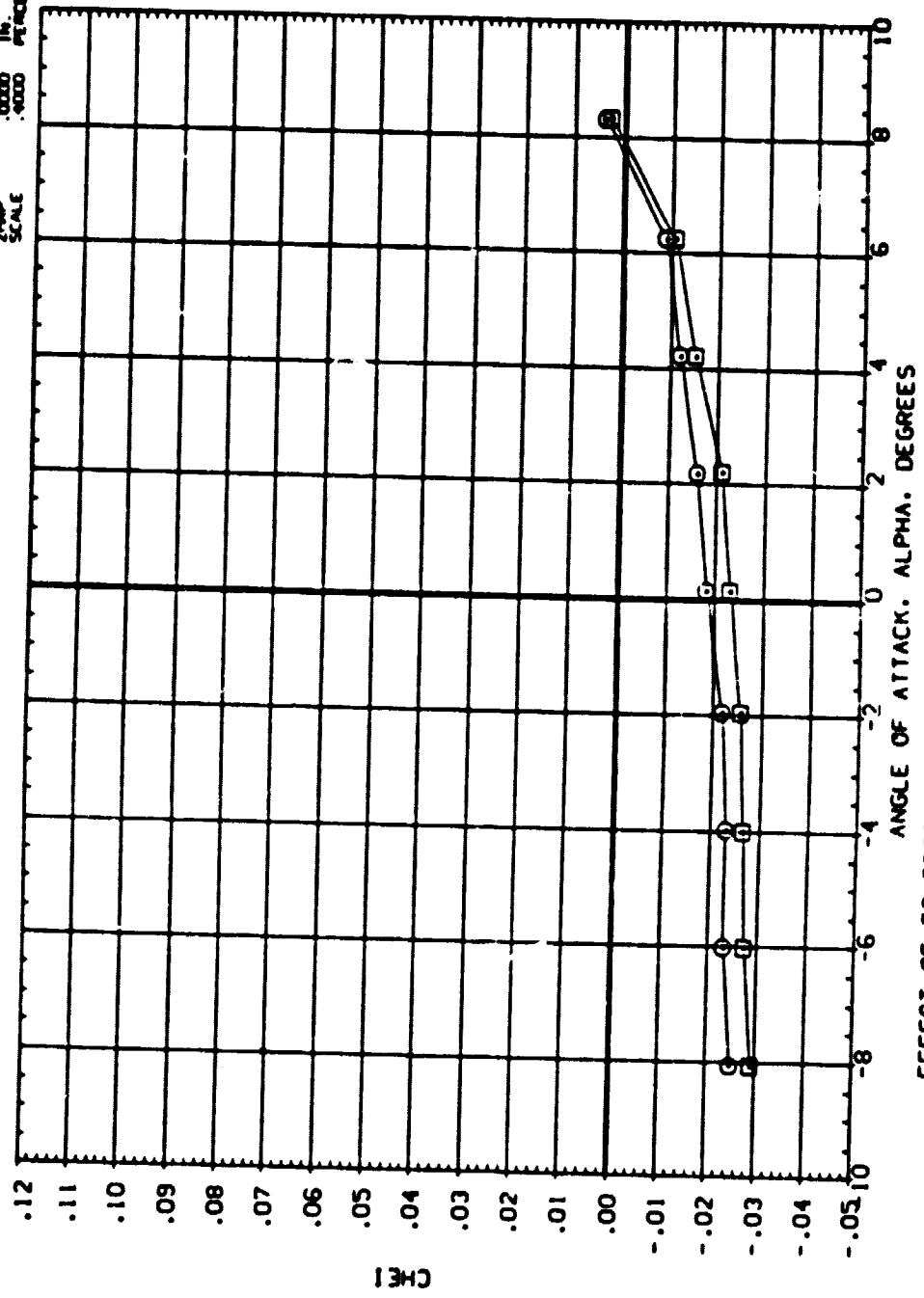


EFFECT OF ET PROTUBERANCES

(D)MACH = 1.05

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION:
 FA20: M5FC TVT 656. CONF 16. Q2VZ20MA11353
 FA20: M5FC TVT 656. CONF 16. Q2VZ20MA11353

REFERENCE INFORMATION
 SRT 6.1580 IN. IN.
 LRET 5.1612 IN. IN.
 BRET 3.7470 IN. IN.
 WWP 2.7120 IN. IN.
 ZWP .0000 IN. IN.
 SCALE .0000 PERCENT

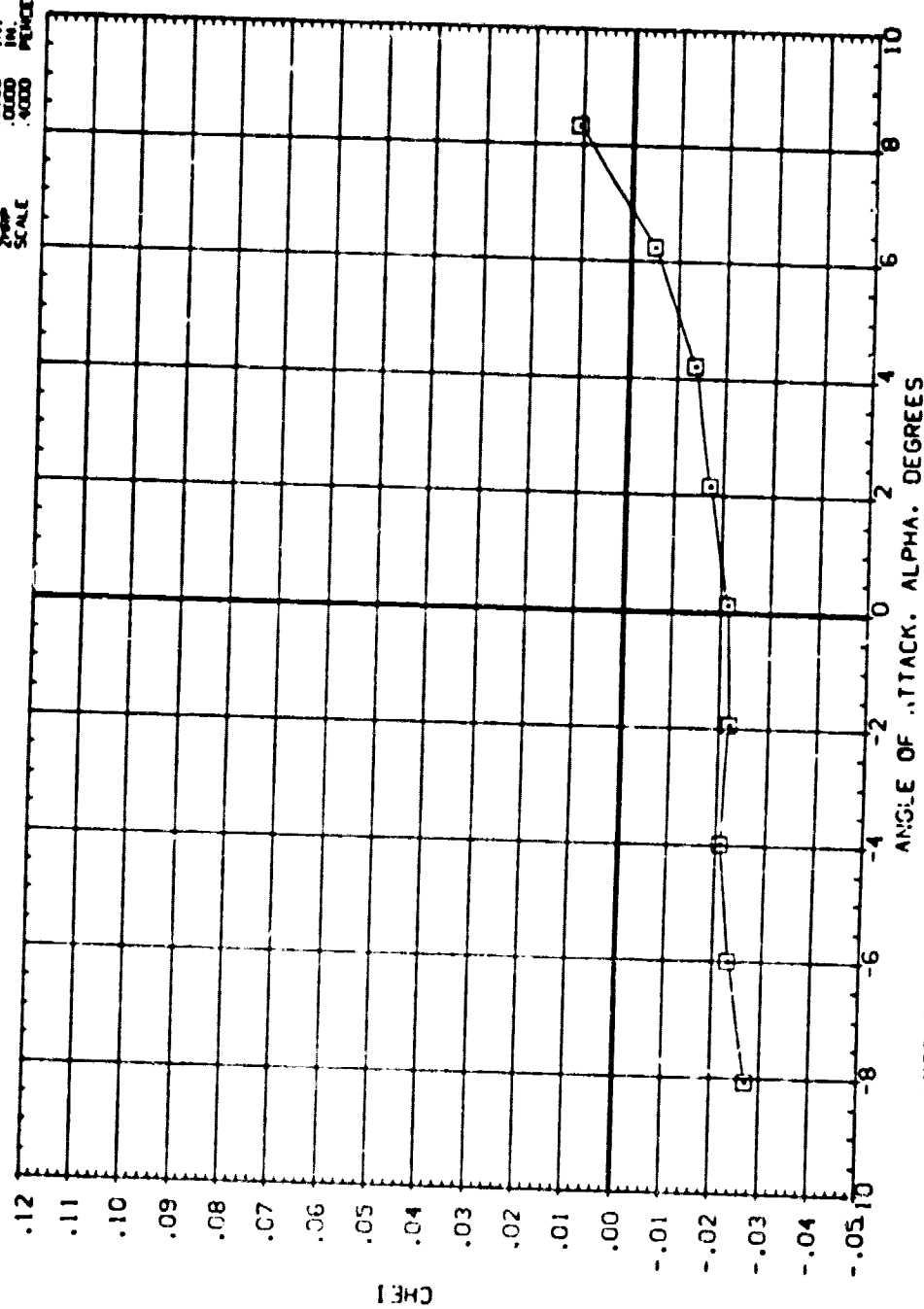


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.11

DATA SET SYMBOL: 8 CONFIGURATION DESCRIPTION:
 (FA2055) DATA NOT AVAILABLE
 (FA2056) PAGE: MSC TWT 656. CONFIG: 02N2E20MPL11363

REFERENCE INFORMATION
 SREF 6.1360 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 HREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE 4000 PERCENT

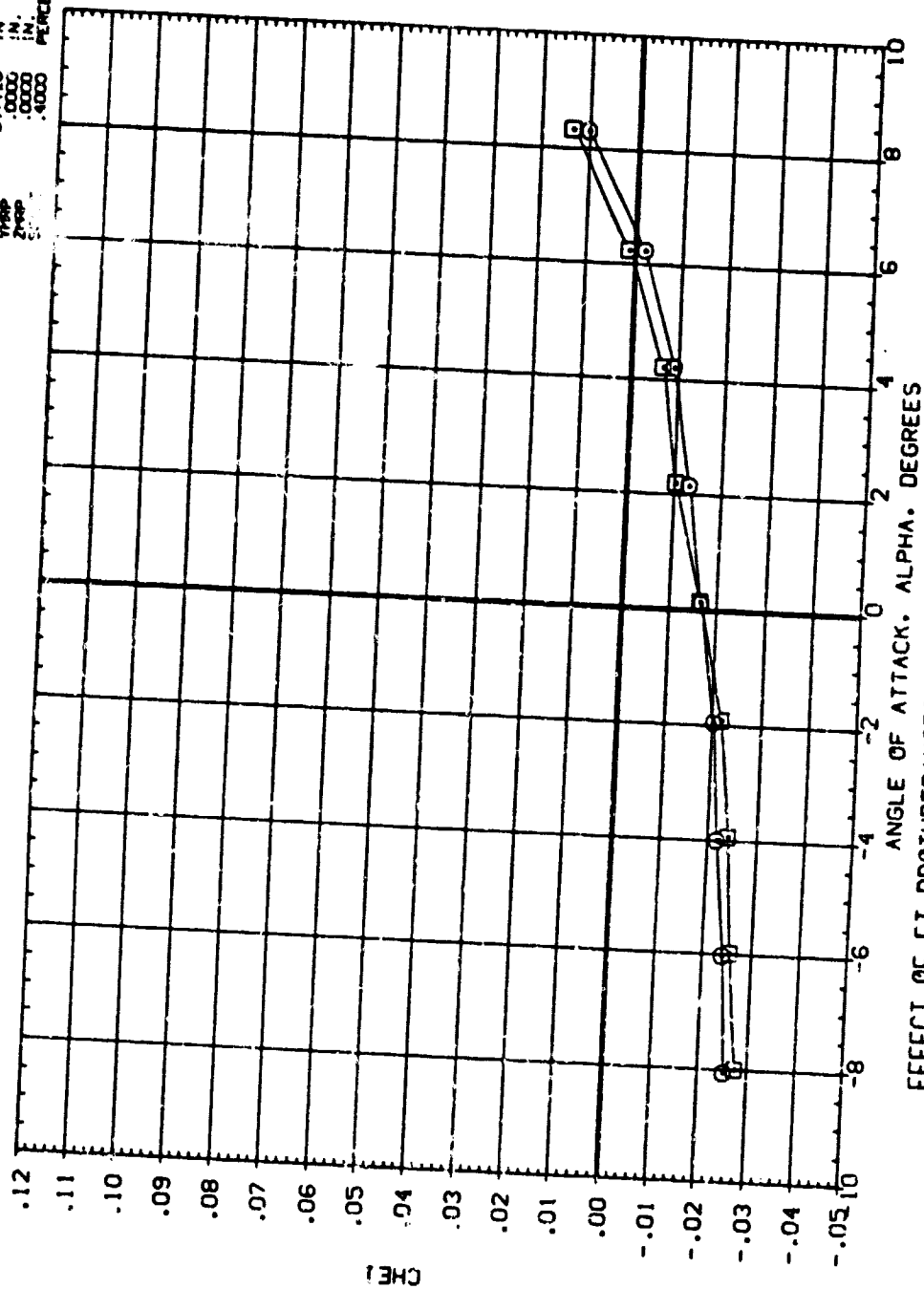


EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15



DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28, MSFC TVT 656, CONF IG: CONJ28MAAT1253
 (FA2858) FA28, MSFC TVT 656, CONF IG: CONJ28MAAT1253

REFERENCE INFORMATION
 SREF 6.1280 50. IN
 LREF 5.1612 50. IN
 BREF 3.7470 50. IN
 XREF 2.7120 50. IN
 YREF .0000 50. IN
 ZREF .0000 50. IN
 PERCENT .4000 PERCENT

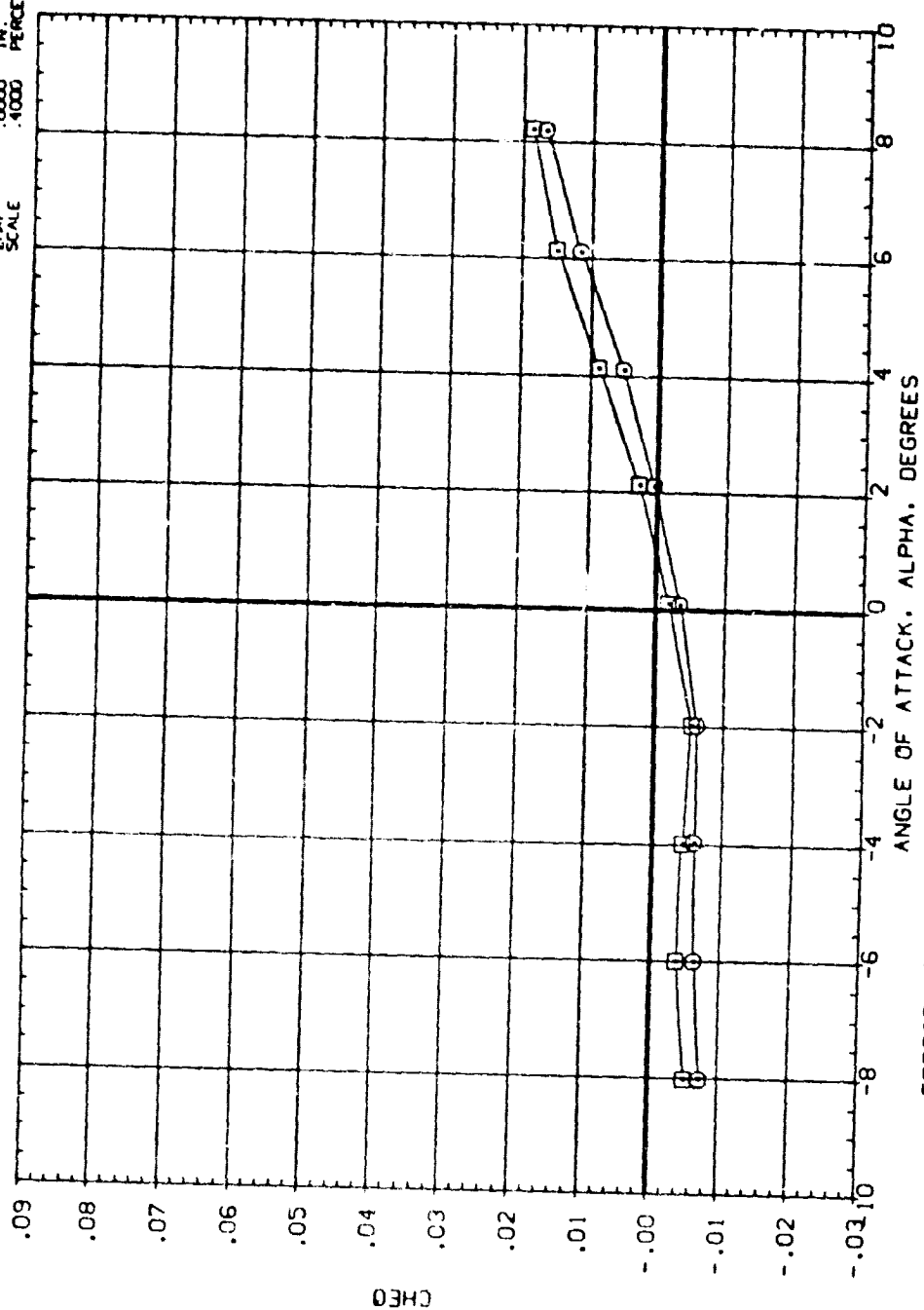


EFFECT OF ET PROTUBERANCES

(G)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2855)  FA28, MSC TVT 656, CONF IG. 02VZ2MNAATT353
 (FA2858)  FA28, MSC TVT 656, CONF IG. 02VZ2MNAATT353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 WREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
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FILE NO.	CONFIRMATION	DESCRIPTION
(FA2855)	FA28. MSC TWT 656.	CONF. 1G.
(FA2858)	FA28. MSC TWT 656.	CONF. 1G.

FILE NO.	CONFIRMATION	DESCRIPTION
(FA2855)	FA28. MSC TWT 656.	CONF. 1G.
(FA2858)	FA28. MSC TWT 656.	CONF. 1G.

REF	6.150	IN
REF	5.1612	IN.
REF	2.2470	IN.
REF	2.7120	IN.
REF	.0000	IN.
REF	.0000	IN.
SCALE	.0000	PENIN

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2046
20

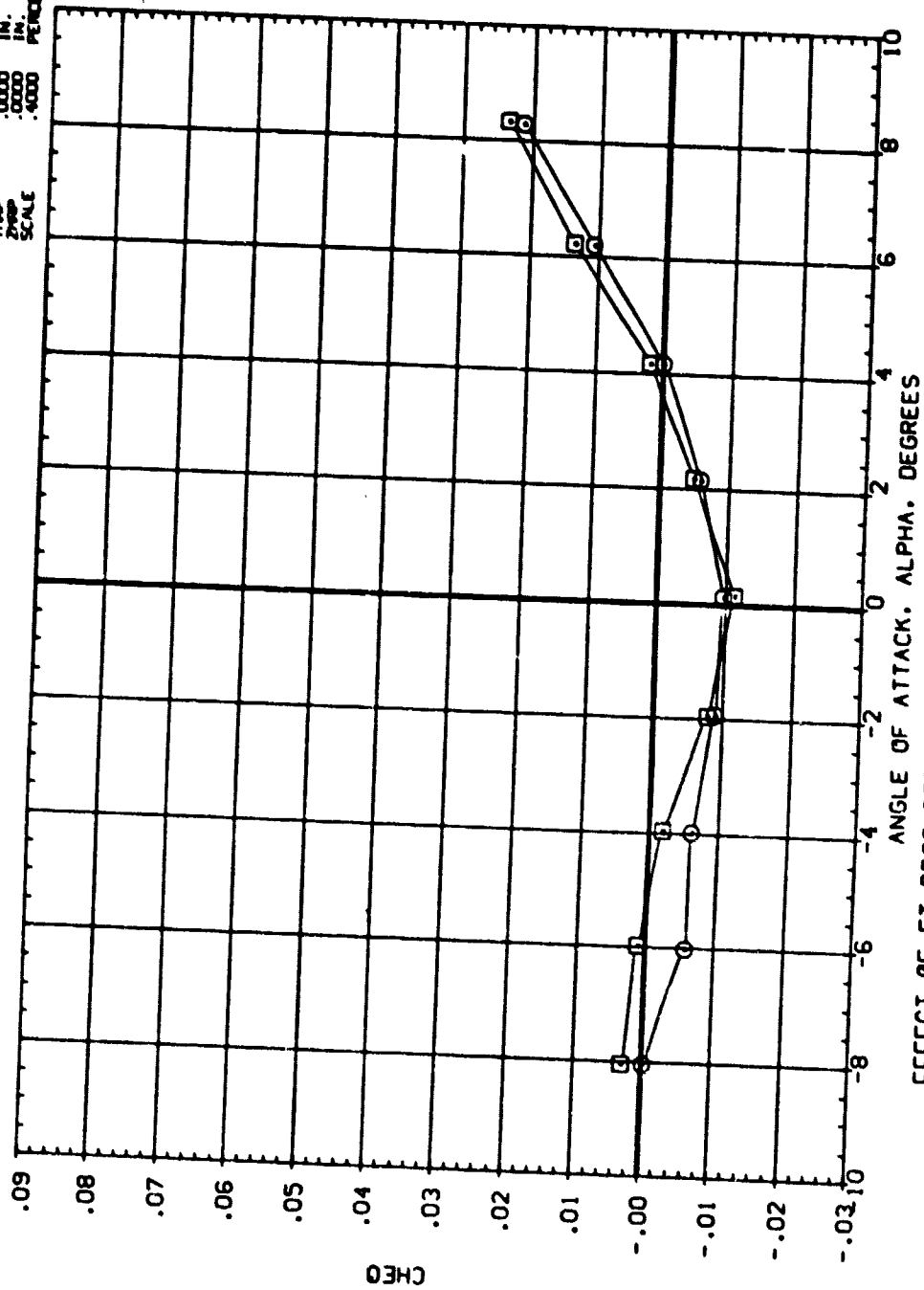
5.1612
2021
2021

2015年12月

288

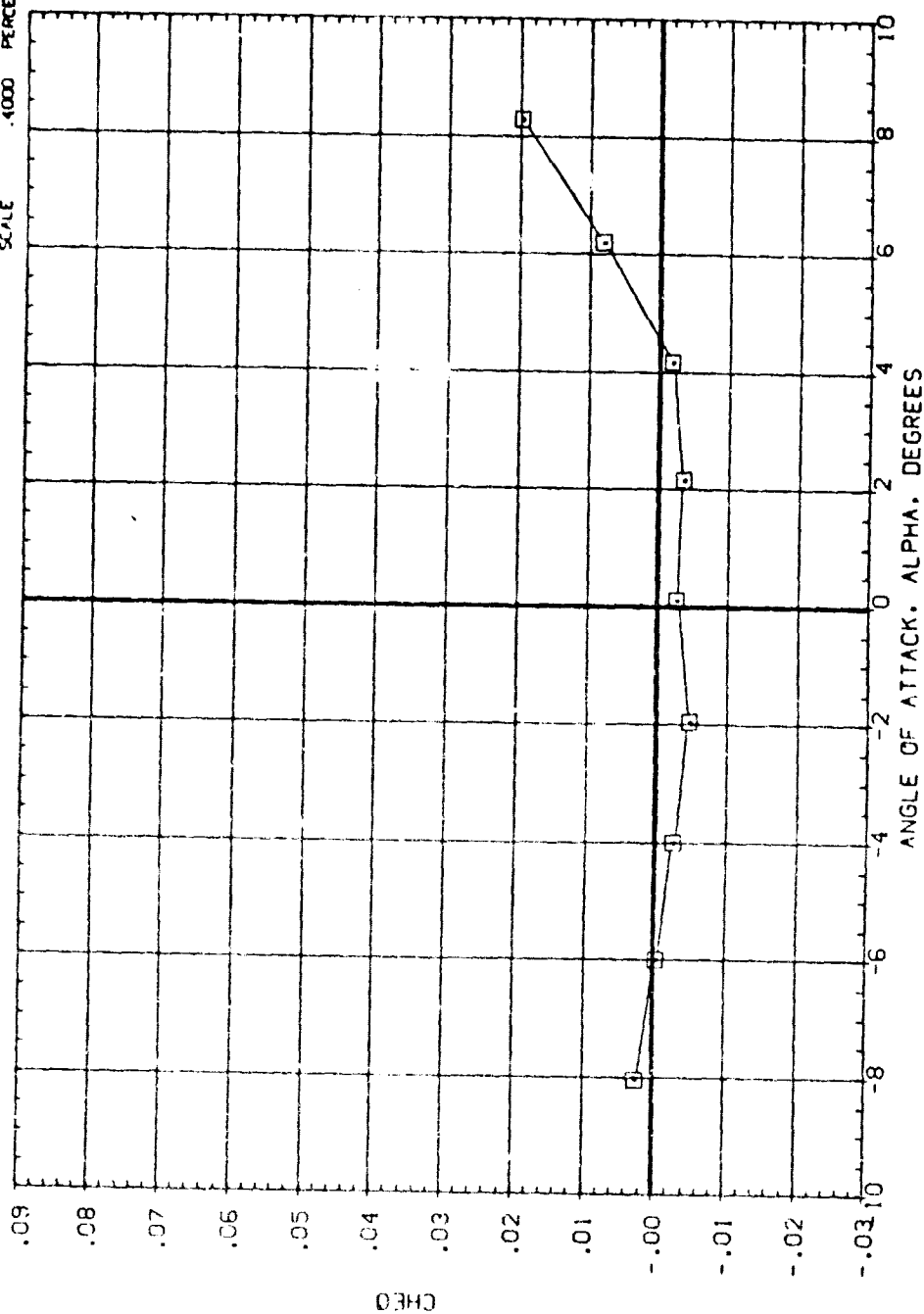
IN. BETWEEN

1955 FORD


$$(B)_{MACH} = .90$$



DATA SET SYMBOL: (FA2855)
 CONFIGURATION DESCRIPTION: DATA NOT AVAILABLE
 (FA2858) FA28, MSFC TWT 656, CONF G, 02VZ22PAA11353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BRIF 3.7470 IN.
 AMPP 2.7120 IN.
 YHPP .0000 IN.
 ZHPP .0000 IN.
 SCALE .4000 PERCENT



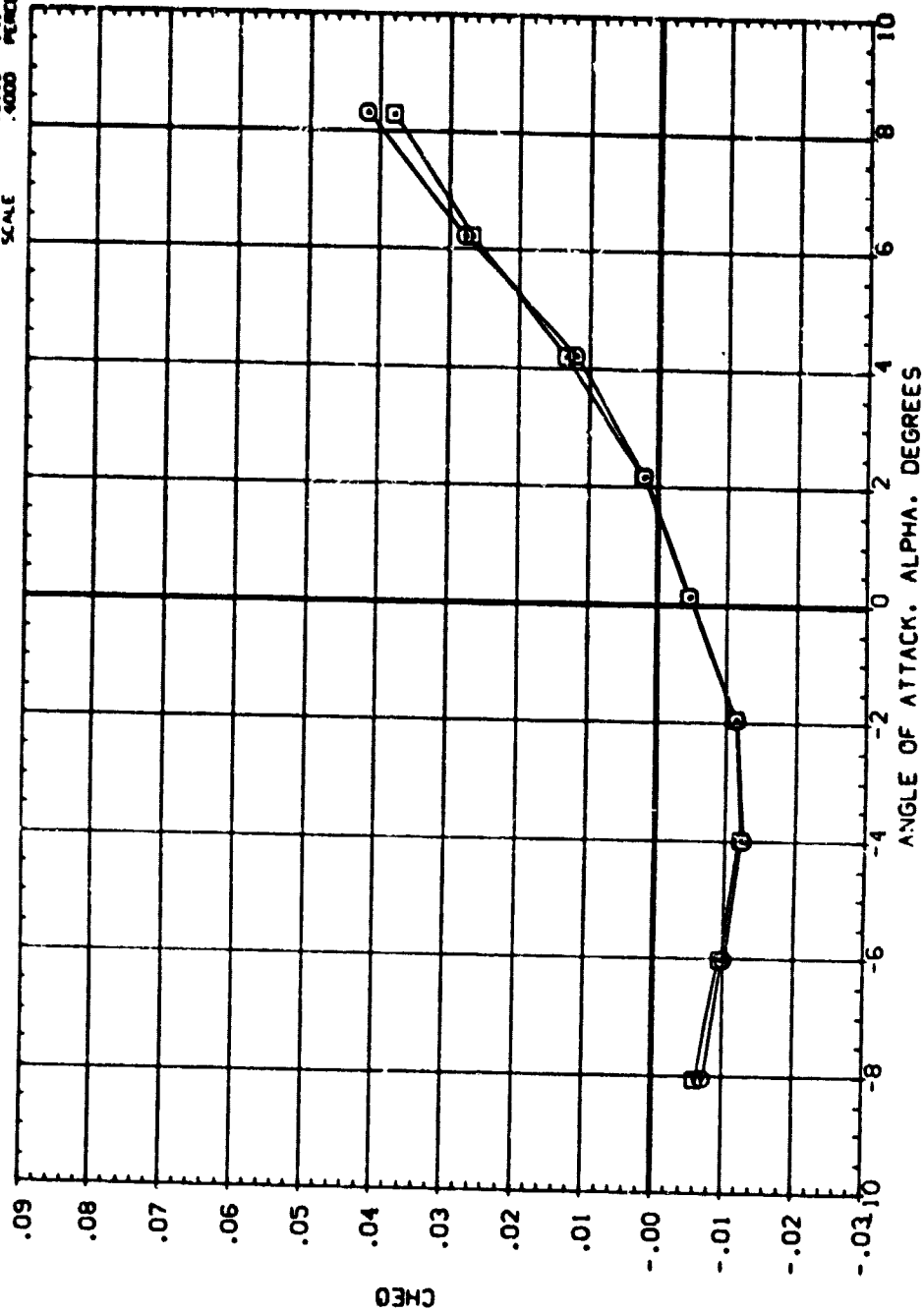
EFFECT OF ET PROTUBERANCES

(C)MACH = .95

DATA SET SYMBOL: (FA2055)  (FA2056) 

CONFIGURATION DESCRIPTION:
 PAR: MSFC TV: 656. CONF: 02022000AATT353
 PAR: MSFC TV: 656. CONF: 02022000AATT353

REFERENCE INFORMATION:
 REF: 6.1980 IN.
 LREF: 3.1612 IN.
 BREF: 3.7470 IN.
 SREF: 2.7120 IN.
 TREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT

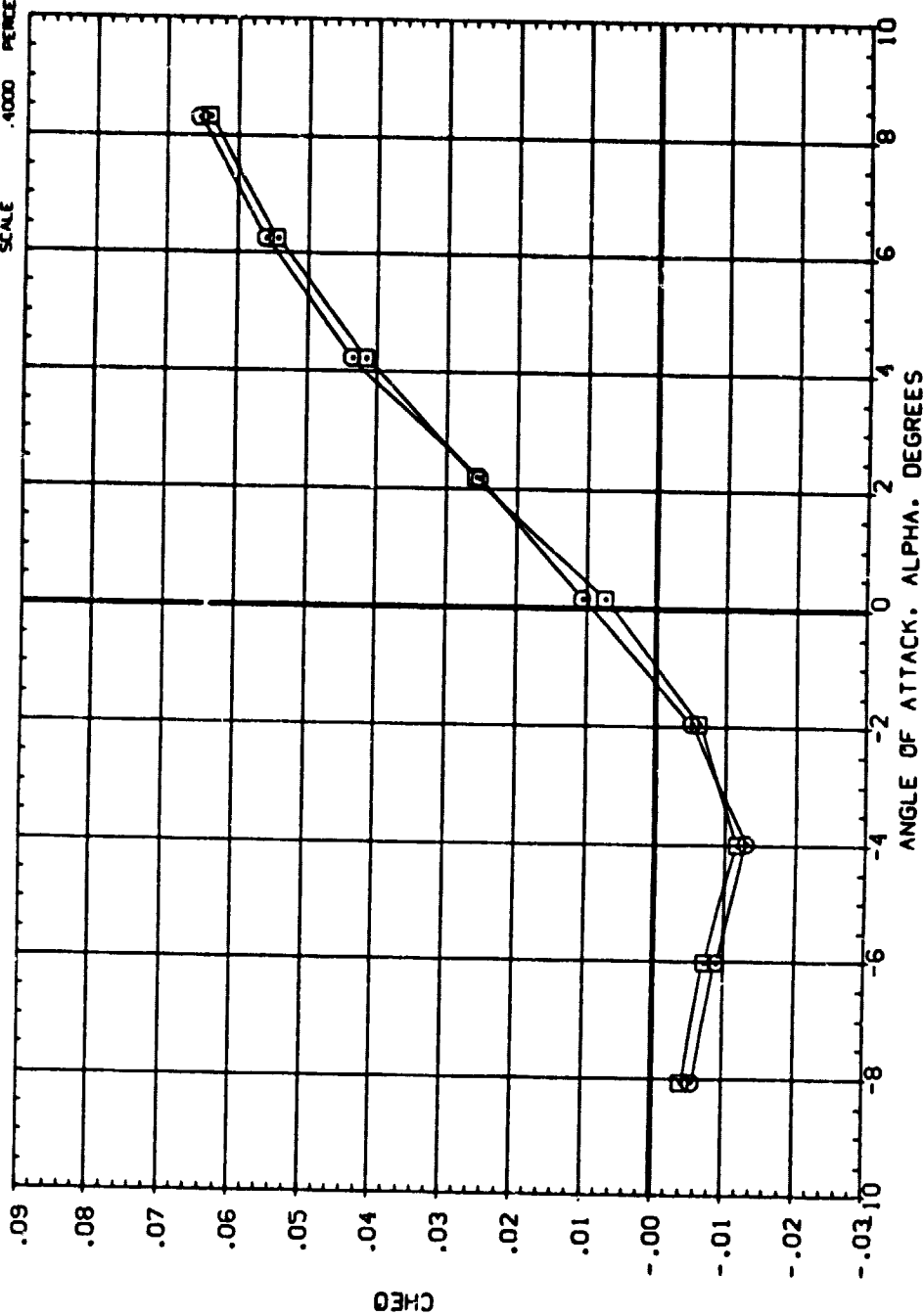


EFFECT OF ET PROTUBERANCES

(O)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2853) B FA28. MSFC TWT 656. CONFIG. 02VZE2MAA11353
 (FA2858) B FA28. MSFC TWT 656. CONFIG. 02VZE2MAA11353

REFERENCE INFORMATION
 SREF 6.1890 SQ. IN.
 LREF 3.1612 IN.
 BREF 2.7170 IN.
 WREF 2.7170 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

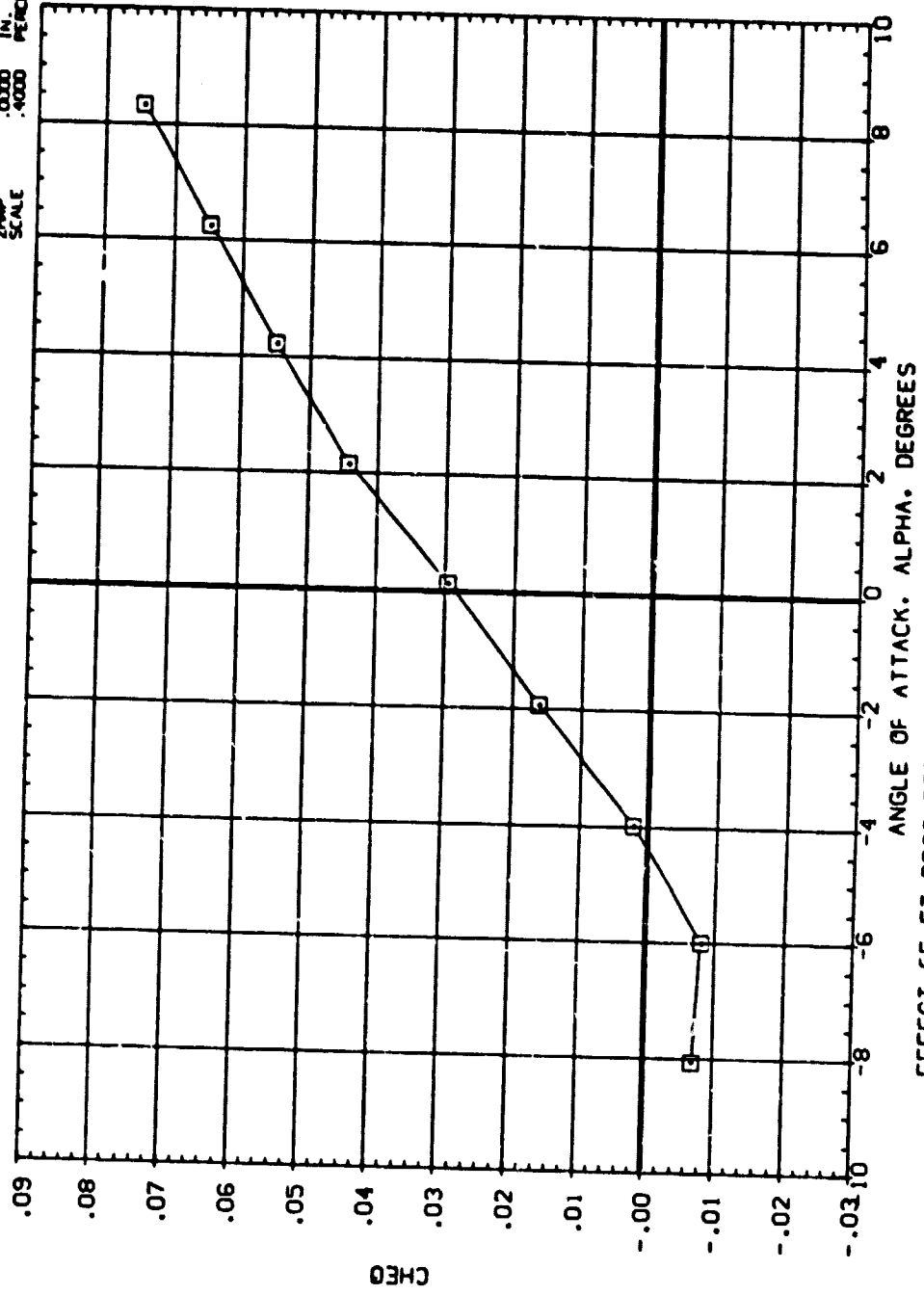


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.11

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2053) DATA NOT AVAILABLE
 (FA2058) FA20. MSC 101 656. CONF 16. COV2E2MPAAT7353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

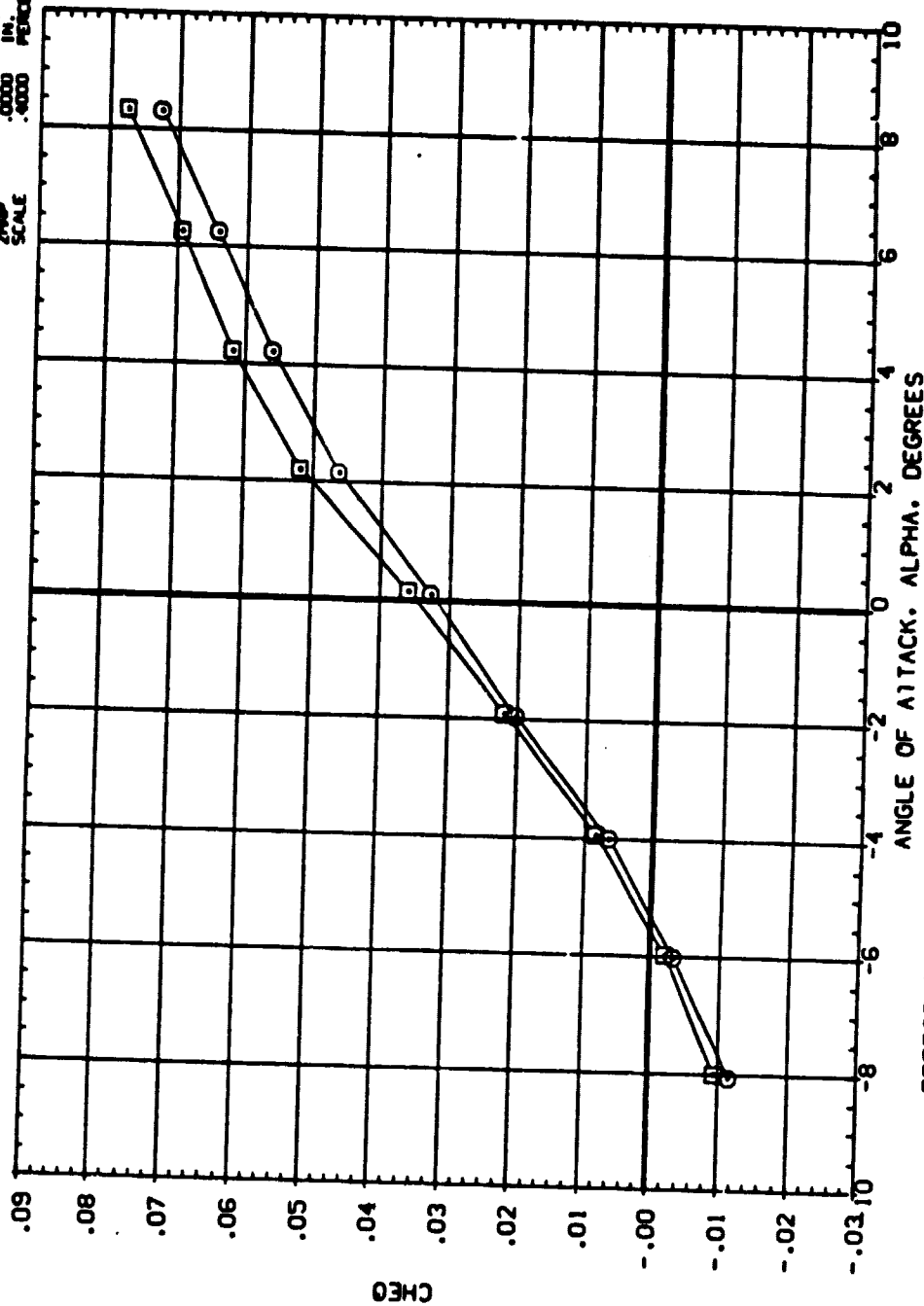


EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15



DATA SET SYMBOL: **□** CONFIGURATION DESCRIPTION:
 FACE: MSFC TVT 655. CONF 1G. ORVZ 2MMATT253
 FACE: MSFC TVT 655. CONF 1G. ORVZ 2MMATT253

REFERENCE INFORMATION:
 SPOT 8.1850 50. IN.
 LIFT 3.1612 IN.
 BRD 2.1470 IN.
 WHP 2.7120 IN.
 ZHP .0000 IN.
 SCALE .0000 IN.
 PERIOD .0000 IN.

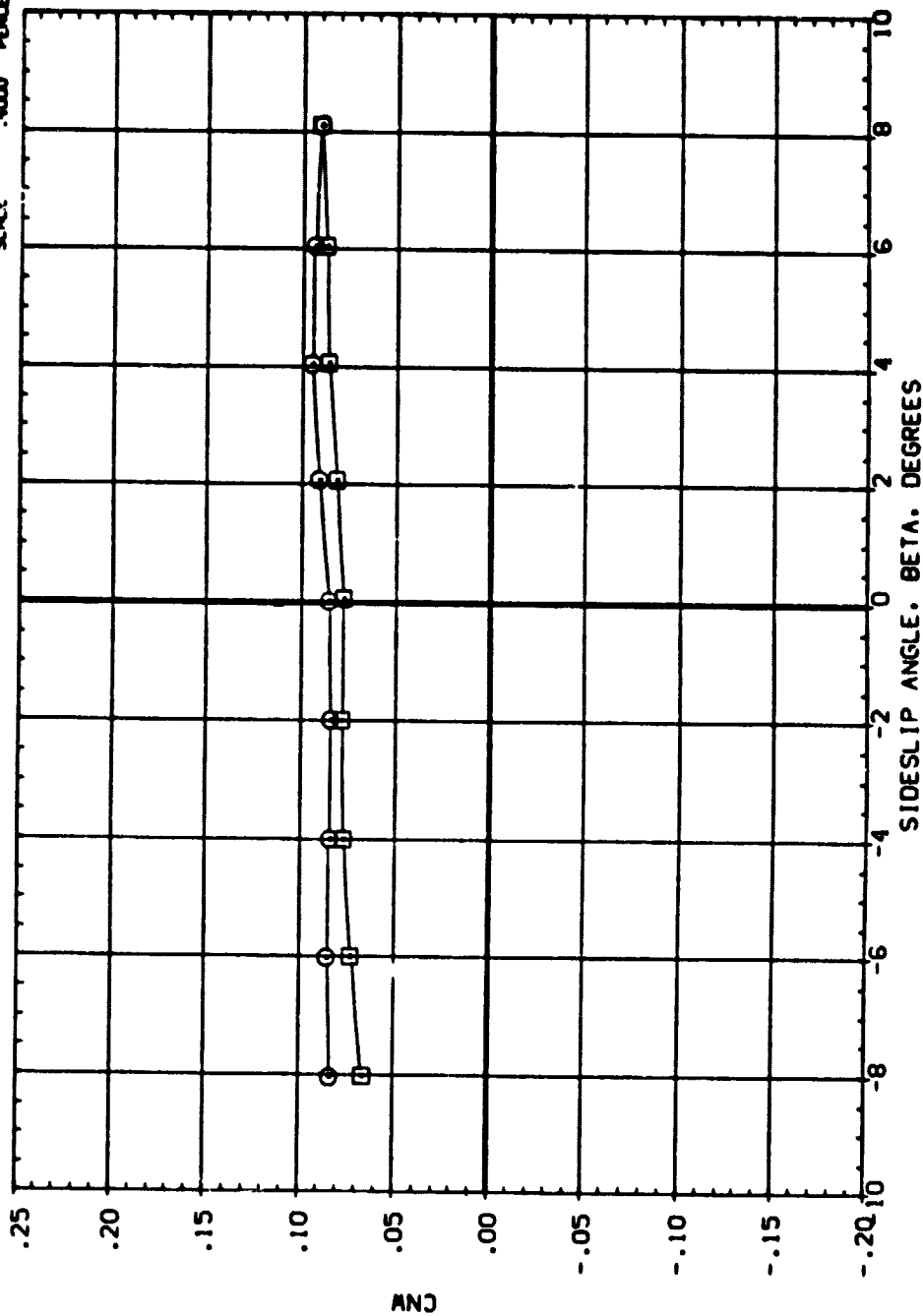


EFFECT OF ET PROTUBERANCES

(G)MACH = 1.25


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2856)  FA28. MSC TVT 656. CONF IG. 02VZ20MAAT1353
 (FA2859)  FA28. MSC TVT 656. CONF IG. 02VZ20MAAT1353

REFERENCE INFORMATION
 SREF 5.1580 SQ. IN
 LREF 5.1612 IN.
 WREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

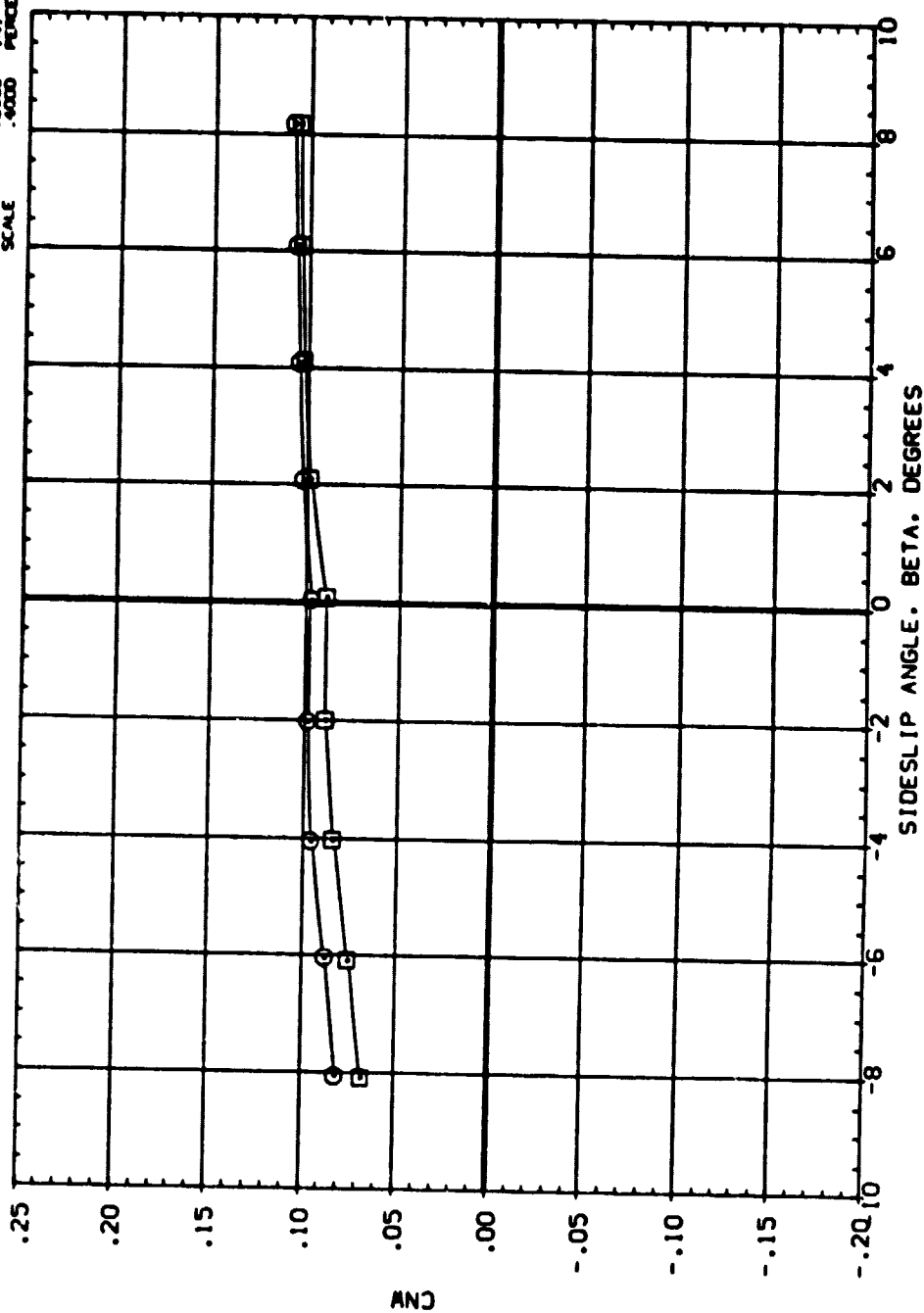


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: (FA2856) (FA2859)  CONFIGURATION DESCRIPTION: FA28. MSC TWT 656. CONF IG. 02VZ220AAATT353 FA28. MSC TWT 656. CONF IG. 02VZ220AAATT353

REFERENCE INFORMATION
 REF 6.1360 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 TREF 2.7120 IN.
 TREF .0000 IN.
 SCALE .4000 PERCENT



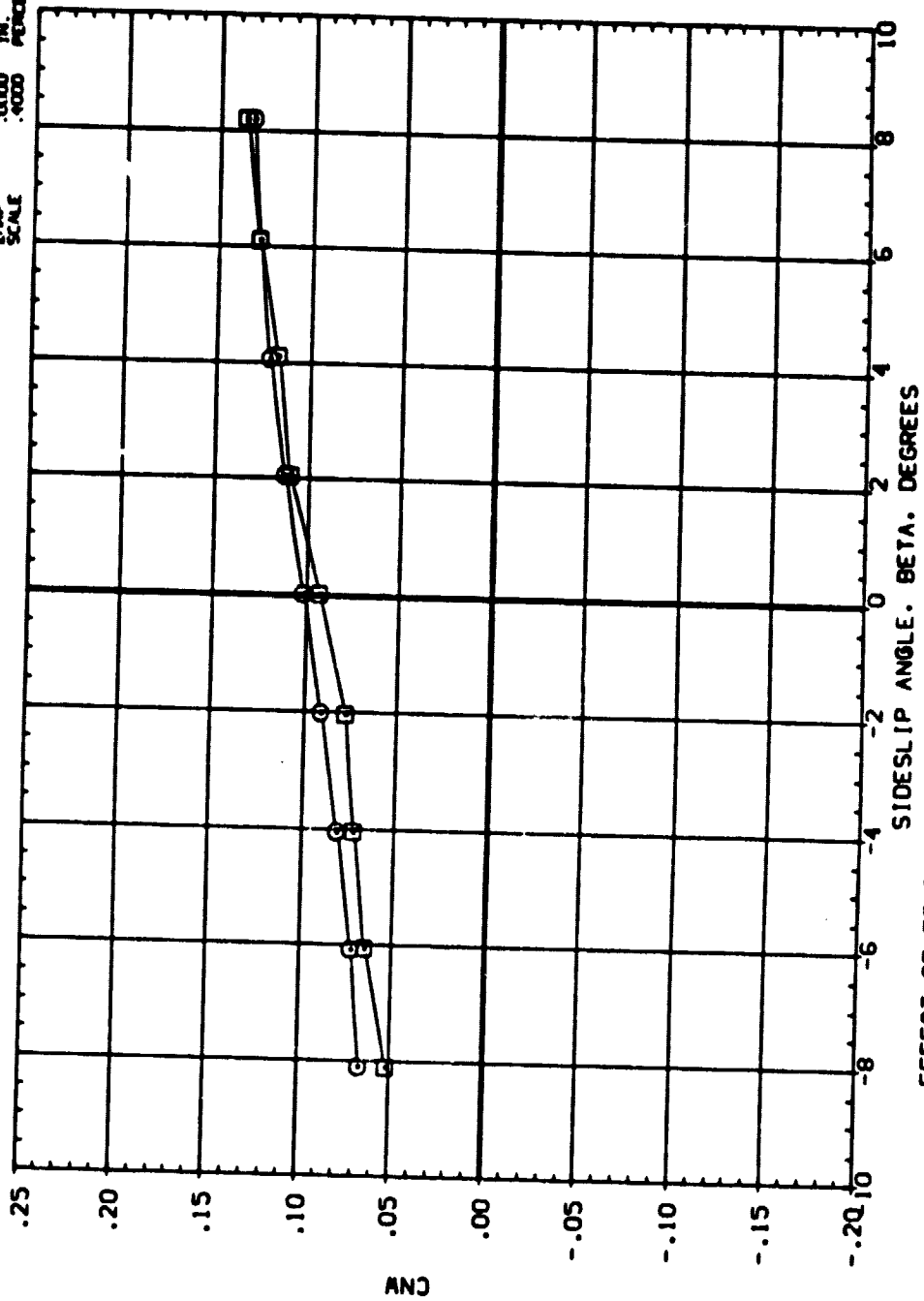
EFFECT OF ET PROTUBERANCES

(B)MACH = .90

0015 144 1000 14
 14 14 14 14 14 14

DATA SET SYMBOL: (FA2054)
 CONFIGURATION DESCRIPTION: (FA2054)
 FA20: HSPC TWT 655. CONF 1G. COVEZ200AATT353
 FA20: HSPC TWT 655. CONF 1G. COVEZ200AATT353

REFERENCE INFORMATION
 SWEET 6.1980 90. IN.
 LWT 3.1612 IN.
 SWEET 2.7470 IN.
 SWEET 2.7120 IN.
 SWEET .0000 IN.
 SWEET .0000 IN.
 SCALE .0000 PERCENT

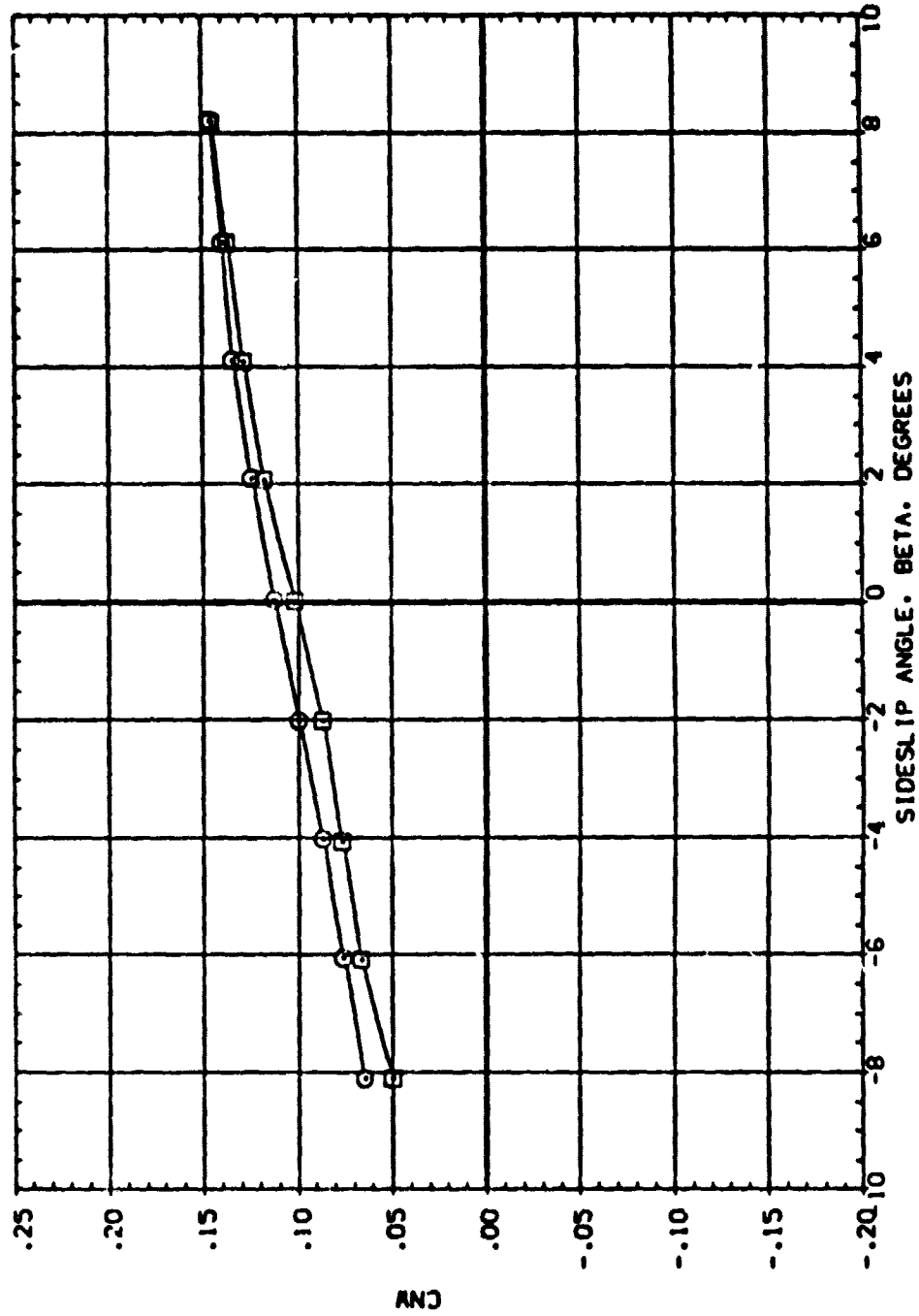


EFFECT OF ET PROTUBERANCES

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA285) □ FA28. MSC TVT 656. CONF 16. GIVEZMAATT353
 (FA2853) □ FA28. MSC TVT 656. CONF 16. GIVEZMAATT353

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 2.7470 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

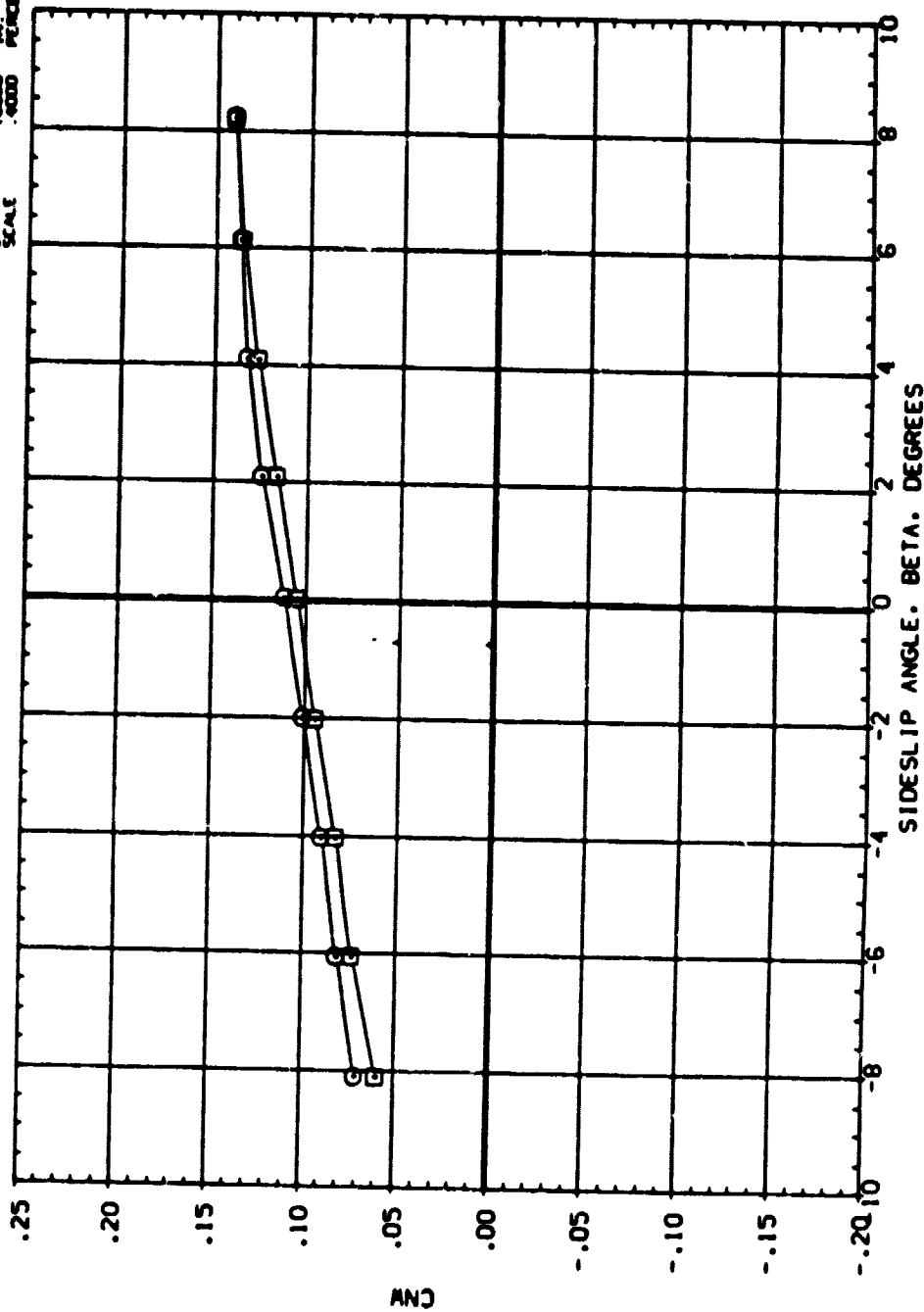


EFFECT OF ET PROTUBERANCES

(COMACH = 1.10)

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION:
 (FAIR: MFC TVT 655; CONF 16; COVE 200MA11253)
 (FAIR: MFC TVT 655; CONF 16; COVE 200MA11253)

REFERENCE INFORMATION
 SPCT: 6.1590 IN.
 LIFT: 5.1612 IN.
 DRAG: 3.2470 IN.
 YAW: 2.7120 IN.
 ROLL: .0000 IN.
 SCALE: .0000 PERCENT



EFFECT OF ET PROTUBERANCES

(E)MACH = 1.25

1-79.	FBI	636.	COV IG.	QVEZDMMITJES
1-84	FBI	636.	COV IG.	QVEZDMMITJES

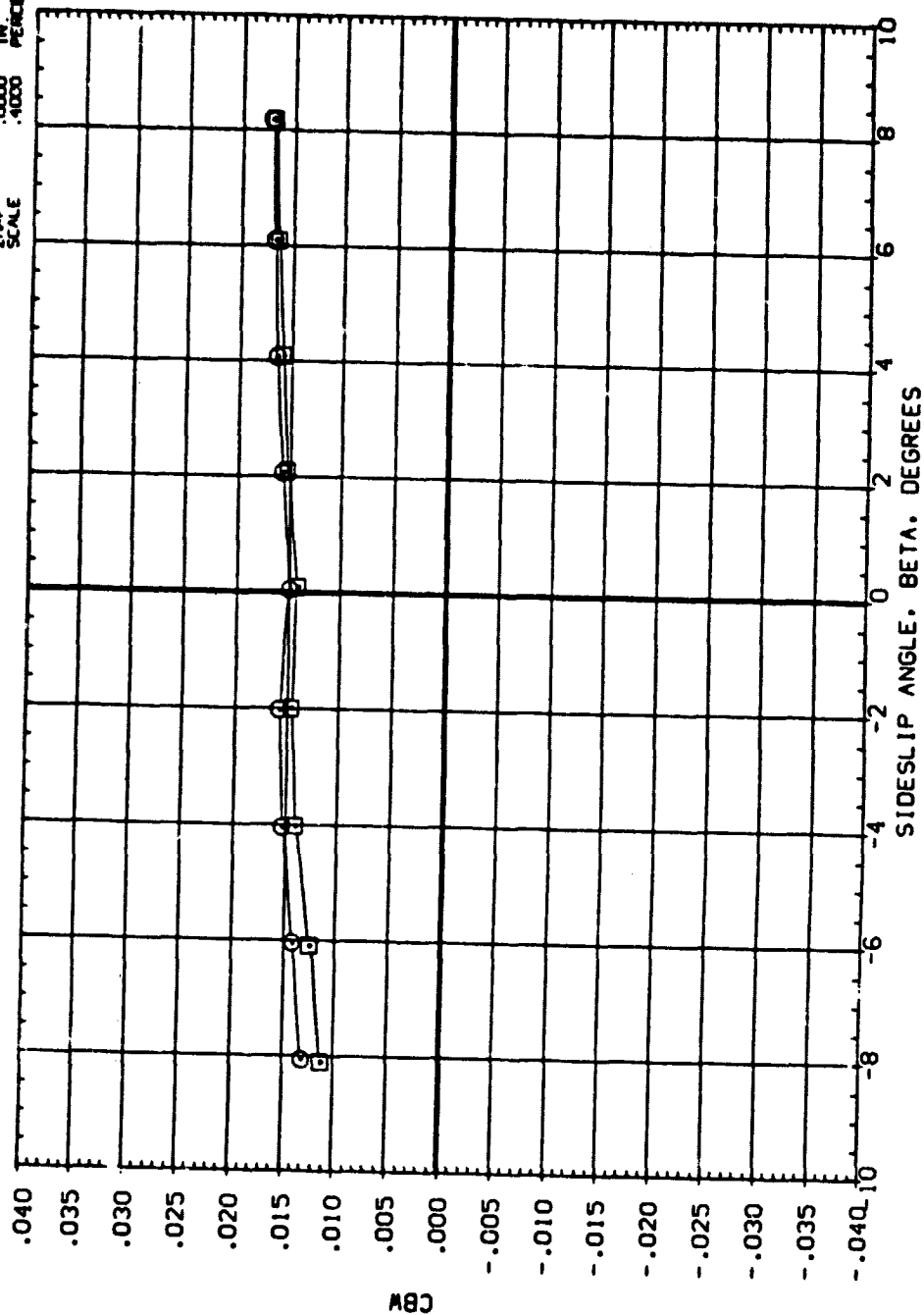
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(A)MACH 3

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA28S) □ FA28. MSFC TVT 656. CONF 1G. Q2N2E20NVAAT1353
 (FA28SS) □ FA28. MSFC TVT 656. CONF 1G. Q2N2E20NPAAT1353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 GREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

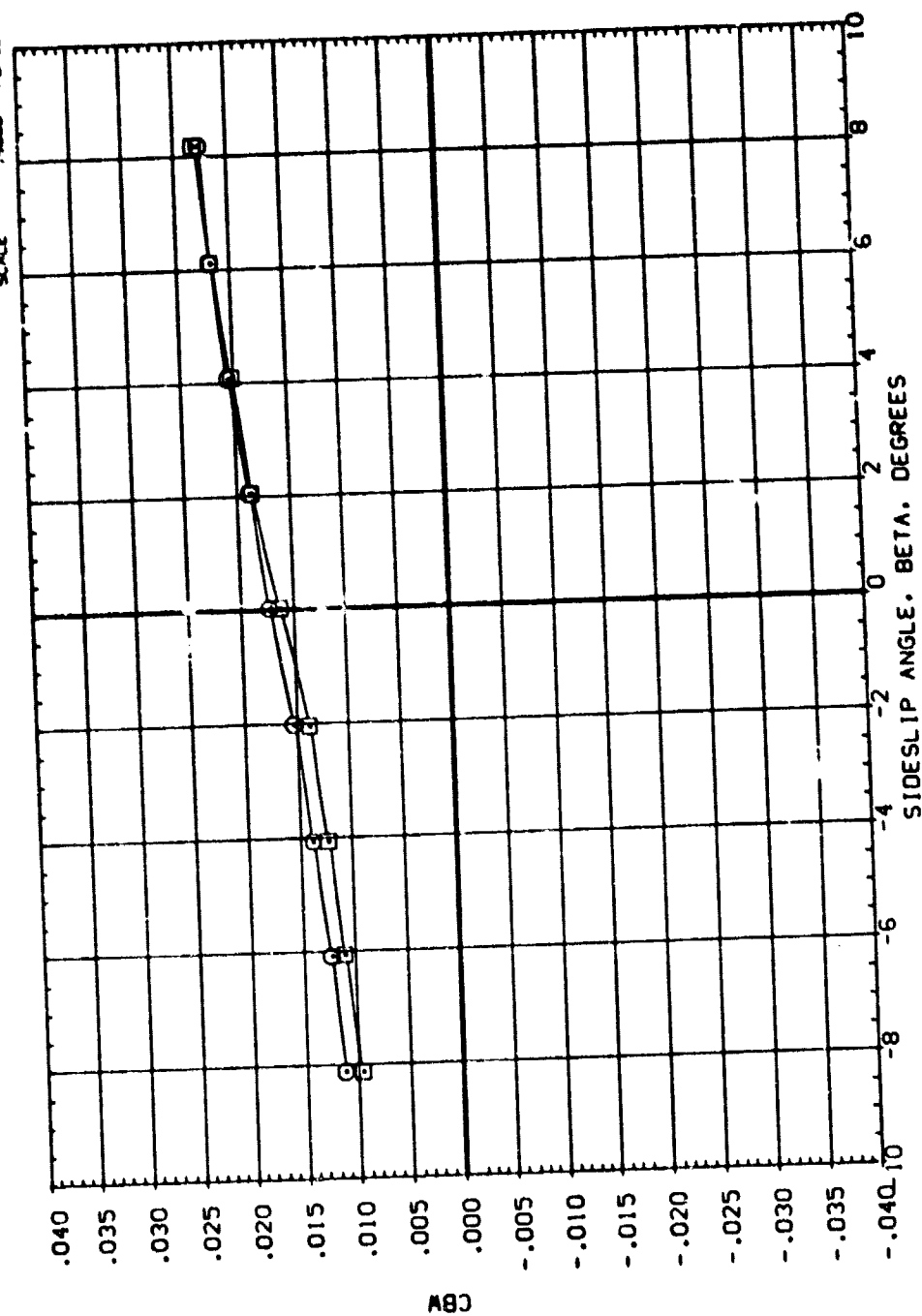


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(FAZ856)	FAZ8. M5C TV 656. CONF 1G.
(FAZ859)	FAZ8. M5C TV 656. CONF 1G.

REFERENCE INFORMATION	
REF	6.1980 IN.
REF	5.1612 IN.
REF	3.7470 IN.
REF	2.7120 IN.
REF	.0000 IN.
REF	.0000 IN.
REF	.0000 IN.
SCALE	.0000 PERCH

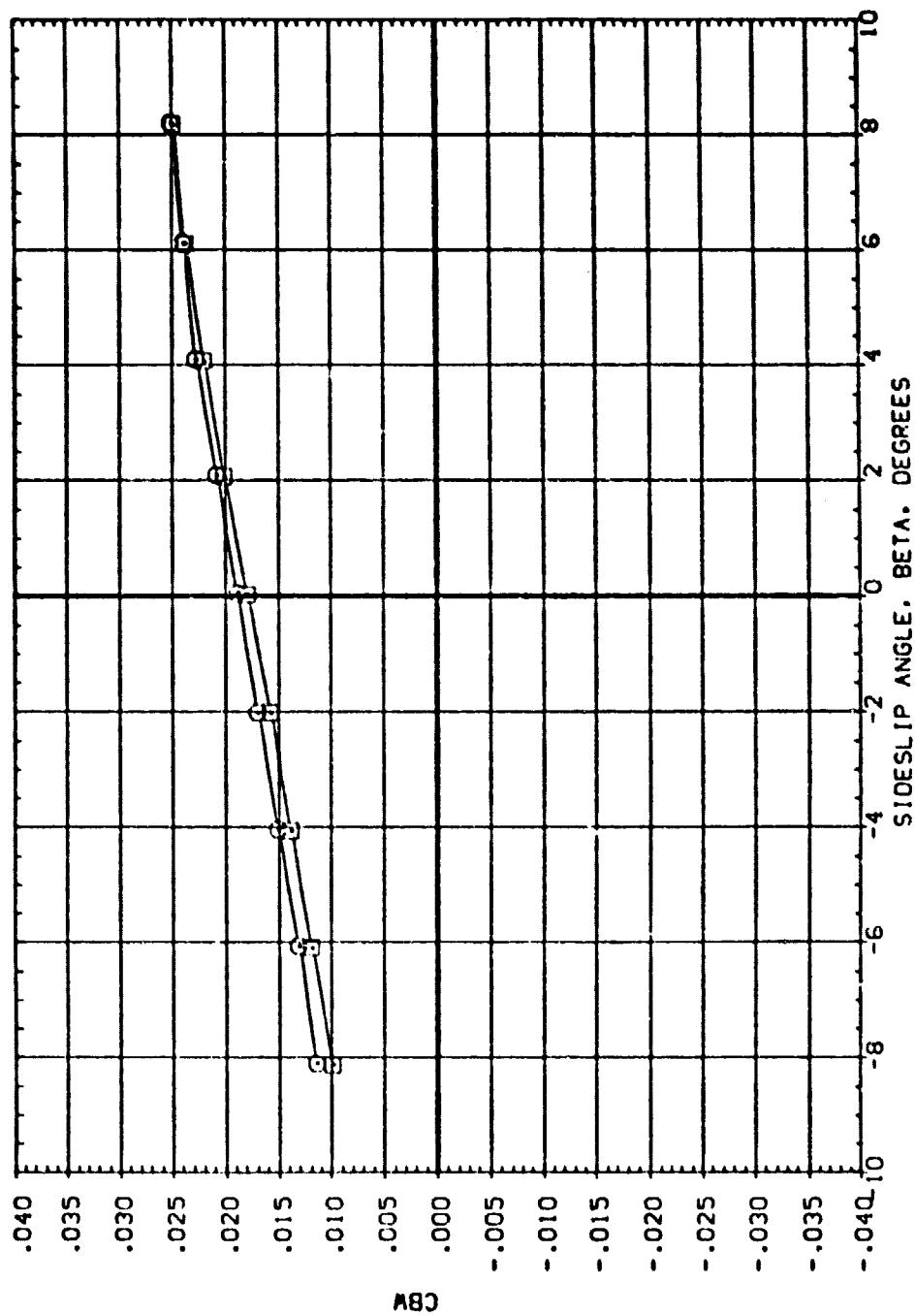


EFFECT OF ET PROTUBERANCES

$$(C)MACI = 1.05$$

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2956) 8 FA28. MSC TVT 656. CONF 10. 02NZE20NVAAT1353
 (FA2859) 8 FA28. MSC TVT 656. CONF 10. 02NZE20NVAAT1353

REFERENCE INFORMATION
 REF 6.1890 90. IN
 LREF 3.1612 10. IN
 BREF 2.7120 10. IN
 TREF .0000 10. IN
 TREF .0000 10. IN
 SCALE .0000 PERCENT

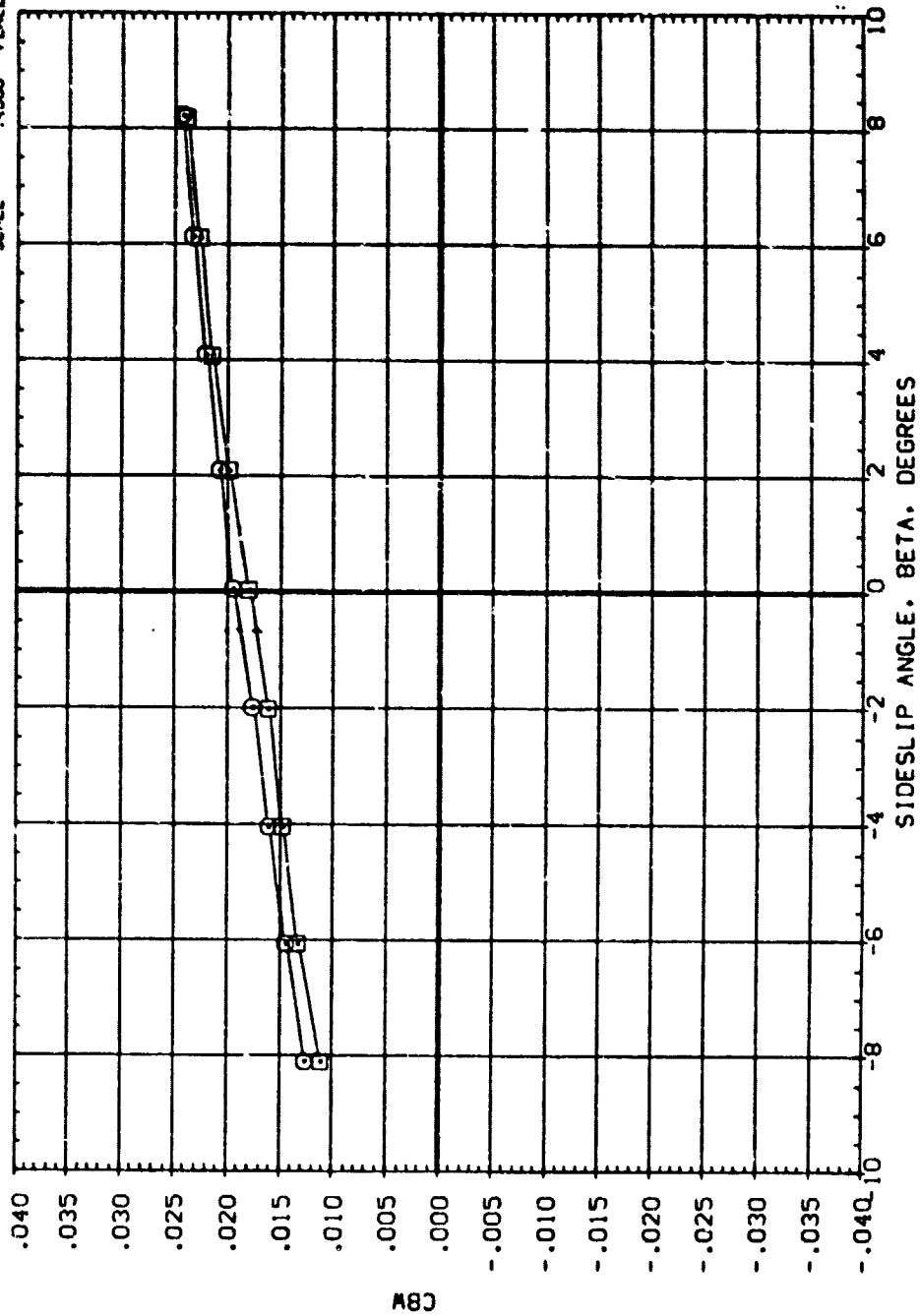


EFFECT OF ET PROTUBERANCES

(0)MACH = 1.10

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION:
 (FA2856) FA28: MSEC TWT 656: CONF 10: ONZE DANAAT723
 (FA2858) FA28: MSEC TWT 656: CONF 10: ONZE DANAAT753

REFERENCE INFORMATION:
 REF: 6.180 IN.
 LREF: 3.1612 IN.
 WREF: 2.7170 IN.
 WREF: 2.7120 IN.
 WREF: .0000 IN.
 WREF: .0000 IN.
 SCALE: .4000 PERCENT

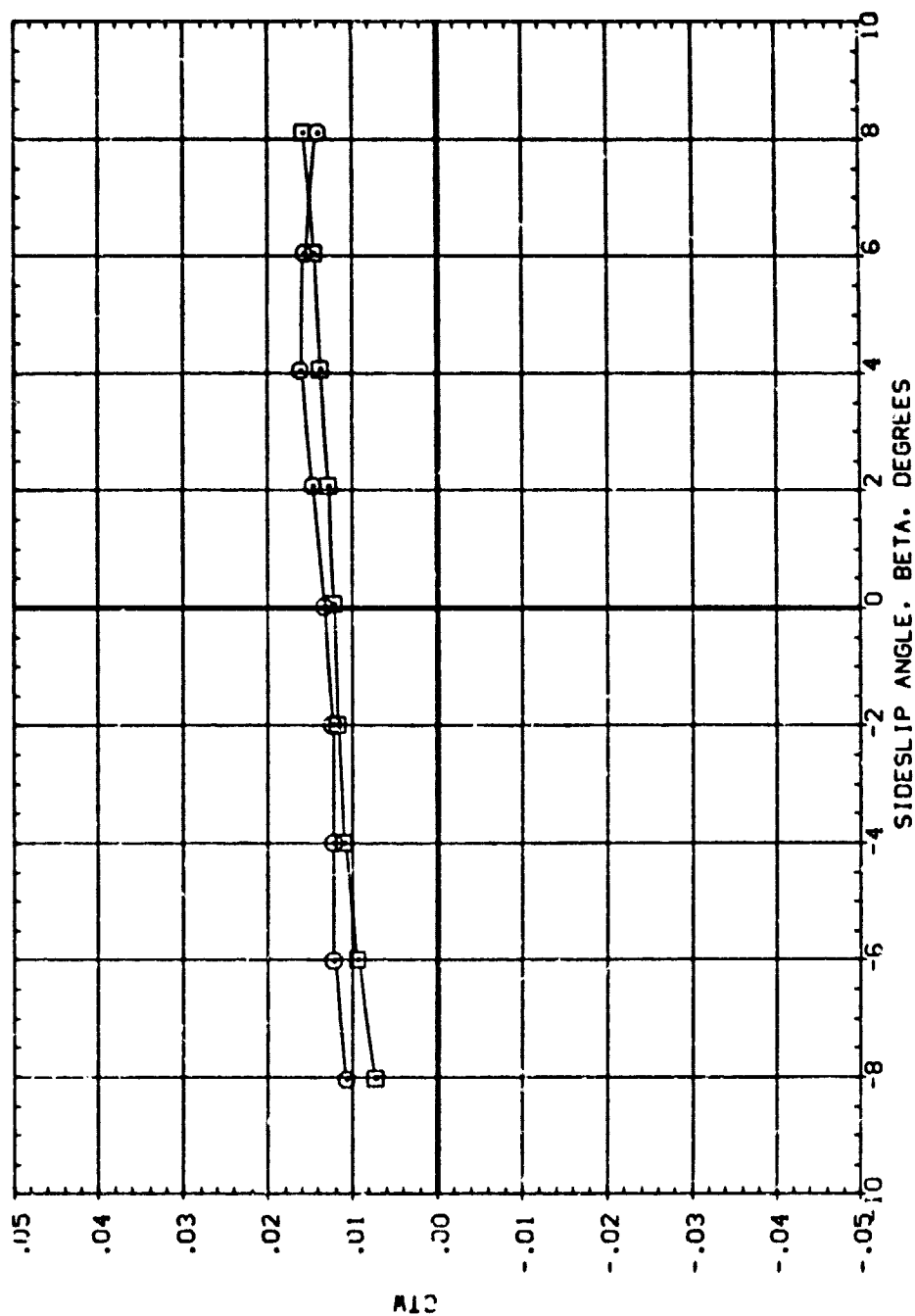


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2855) □ FA28. MSFC TWT 626. CONFIG. 02N2E2MMAATT353
 (FA2853) □ FA28. MSFC TWT 656. CONFIG. 02N2E2MMAATT353

REFERENCE INFORMATION
 SREF 6.1960 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



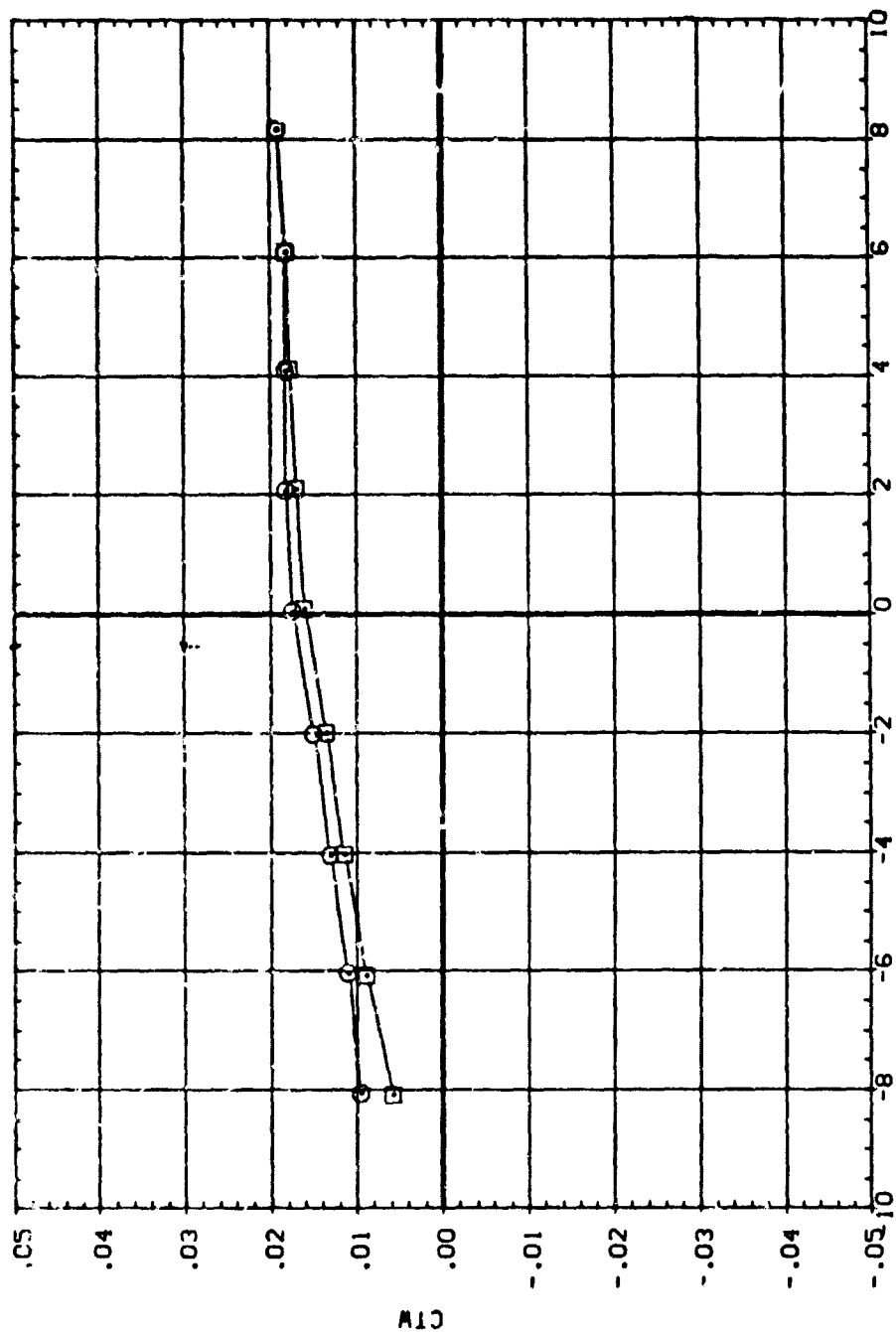
EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: 9
 (FA2856)
 (FA2859)

CONFIGURATION DESCRIPTION
 FA28. MSFC TWT 656. CONF IG. 02VZ20NPAAT1353
 FA28. MSFC TWT 656. CONF IG. 02VZ20NPAAT1353

REFERENCE INFORMATION
 SREF: 6.380 IN.
 LREF: 5.1512 IN.
 MREF: 3.7470 IN.
 XREF: 2.7120 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCAL: .4000 PERCENT



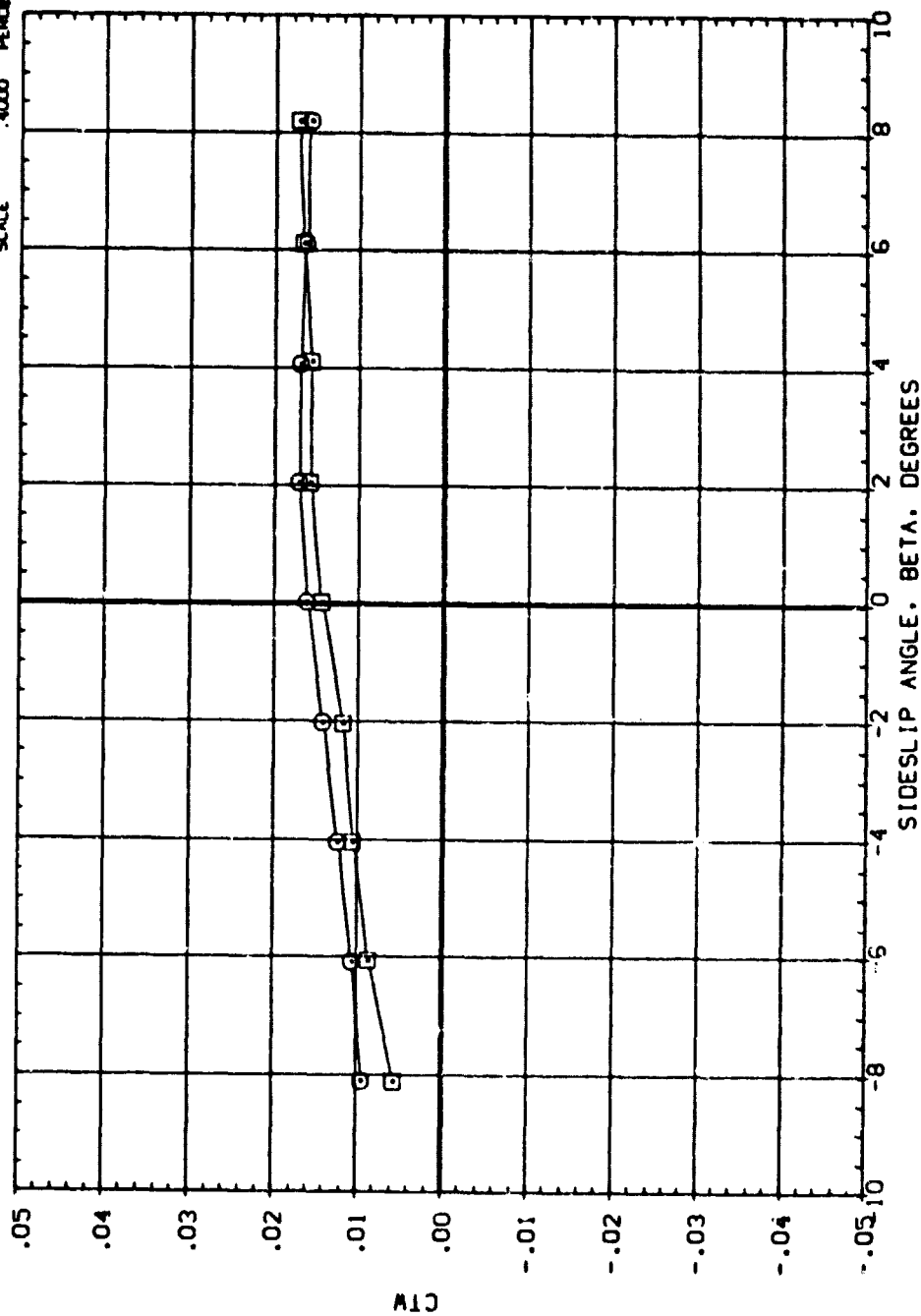
EFFECT OF ET PROTUBERANCES

(B)MACH = .90

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 OF B. & QUALITY

DATA SET SYMBOL: \square CONFIGURATION DESCRIPTION:
 (FA2856) FA28. MSCC TWT 656. COF IG. 0242E2MMAATT753
 (FA2859) FA28. MSCC TWT 656. COF IG. 0242E2MMAATT753

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

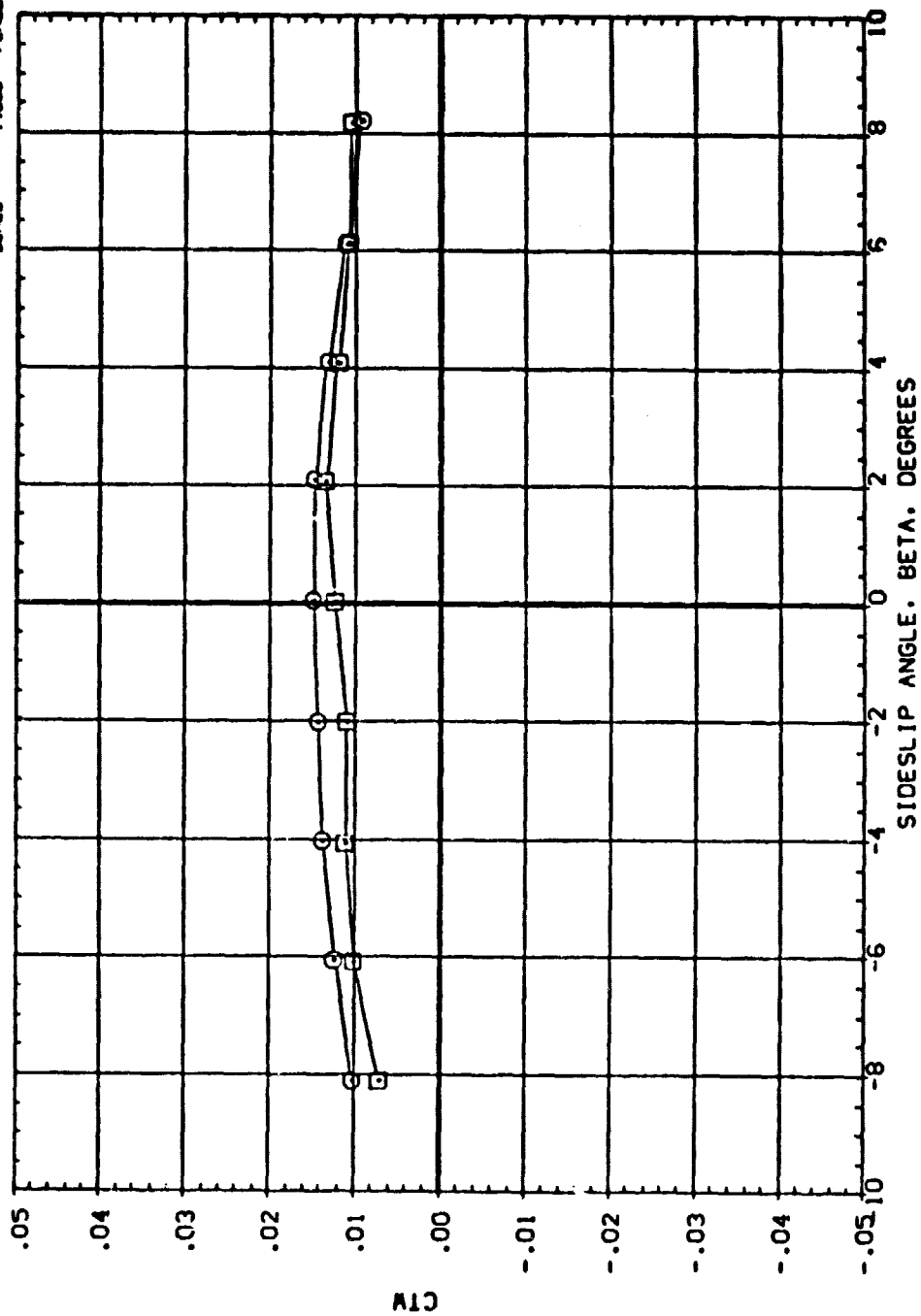


EFFECT OF ET PROTUBERANCES

(C)MACH = 1.05

DATA SET SYMBOL: (FA2056)
 CONFIGURATION DESCRIPTION: FA20. MSFC TVT 656. CONF G. CONVEZNAWATT353
 (FA2059) □ FA20. MSFC TVT 656. CONF G. CONVEZNAWATT353

REFERENCE INFORMATION
 SHEET: 6.1800 SQ. IN.
 LINE: 3.1612 IN.
 DATE: 2.7120 IN.
 WSP: .0000 IN.
 ZWSP: .0000 IN.
 SCALE: .4000 PERIOD

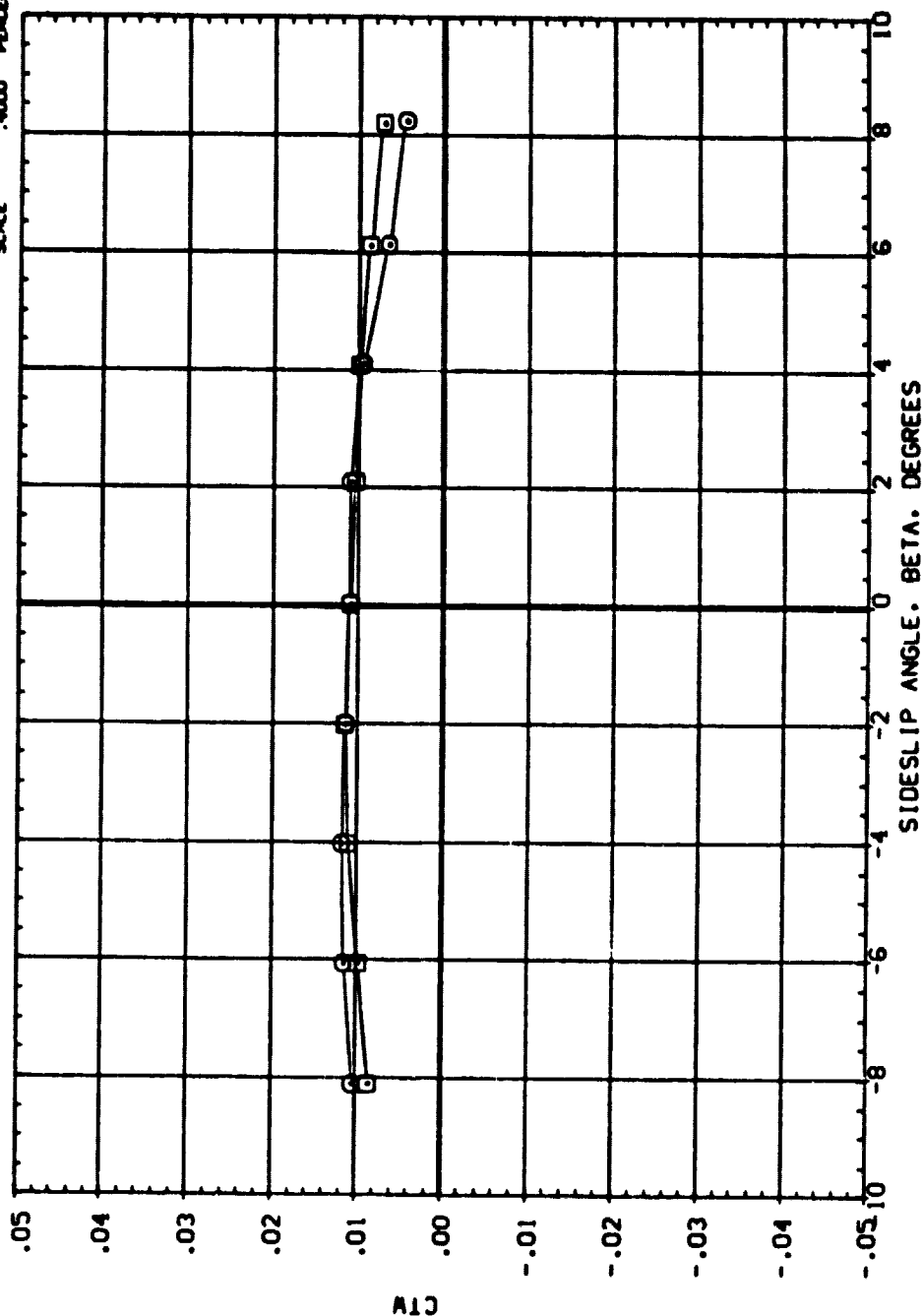


EFFECT OF ET PROTUBERANCES

(0)MACH = 1.10

DATA SET SYMBOL: 8
 (FA2855) (FA2855)
 CONFIGURATION DESCRIPTION:
 FA28: HSC TWT 656. CONF: 10. QVZE2MMA1T253
 FA28: HSC TWT 656. CONF: 10. QVZE2MMA1T253

REFERENCE INFORMATION
 SREF: 6.1560 50. IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 WREF: 2.7120 IN.
 VREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .4000 PERIOD

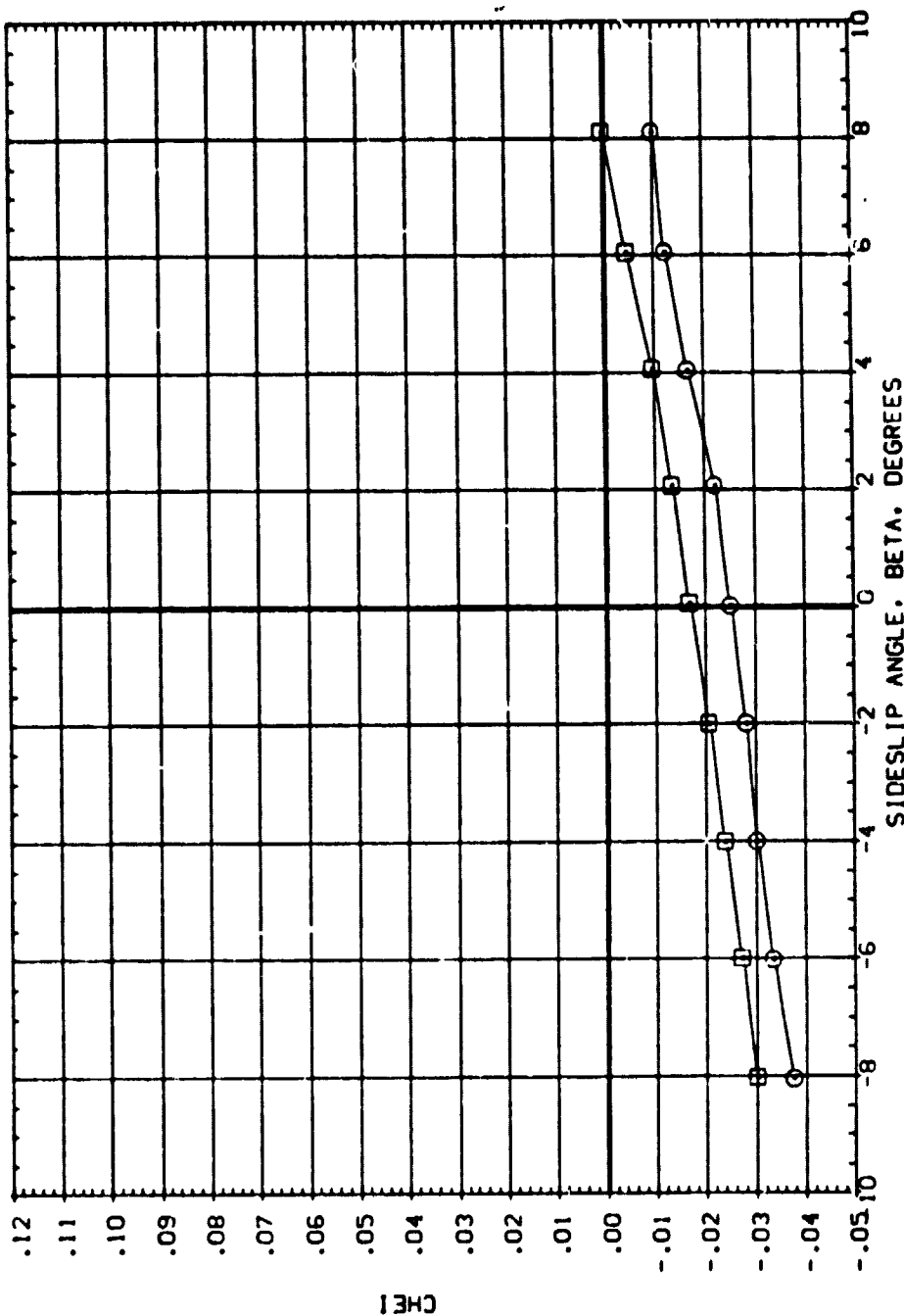


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2853) 8 FA28. MSFC TWT 656. CONF 10. 02NZE20MA11753
 (FA2853) 8 FA28. MSFC TWT 656. CONF 10. 02NZE20MA11753

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YHBP 2.7120 IN.
 YHBP .0000 IN.
 ZHBP .0000 IN.
 SCALE .4000 PERCENT

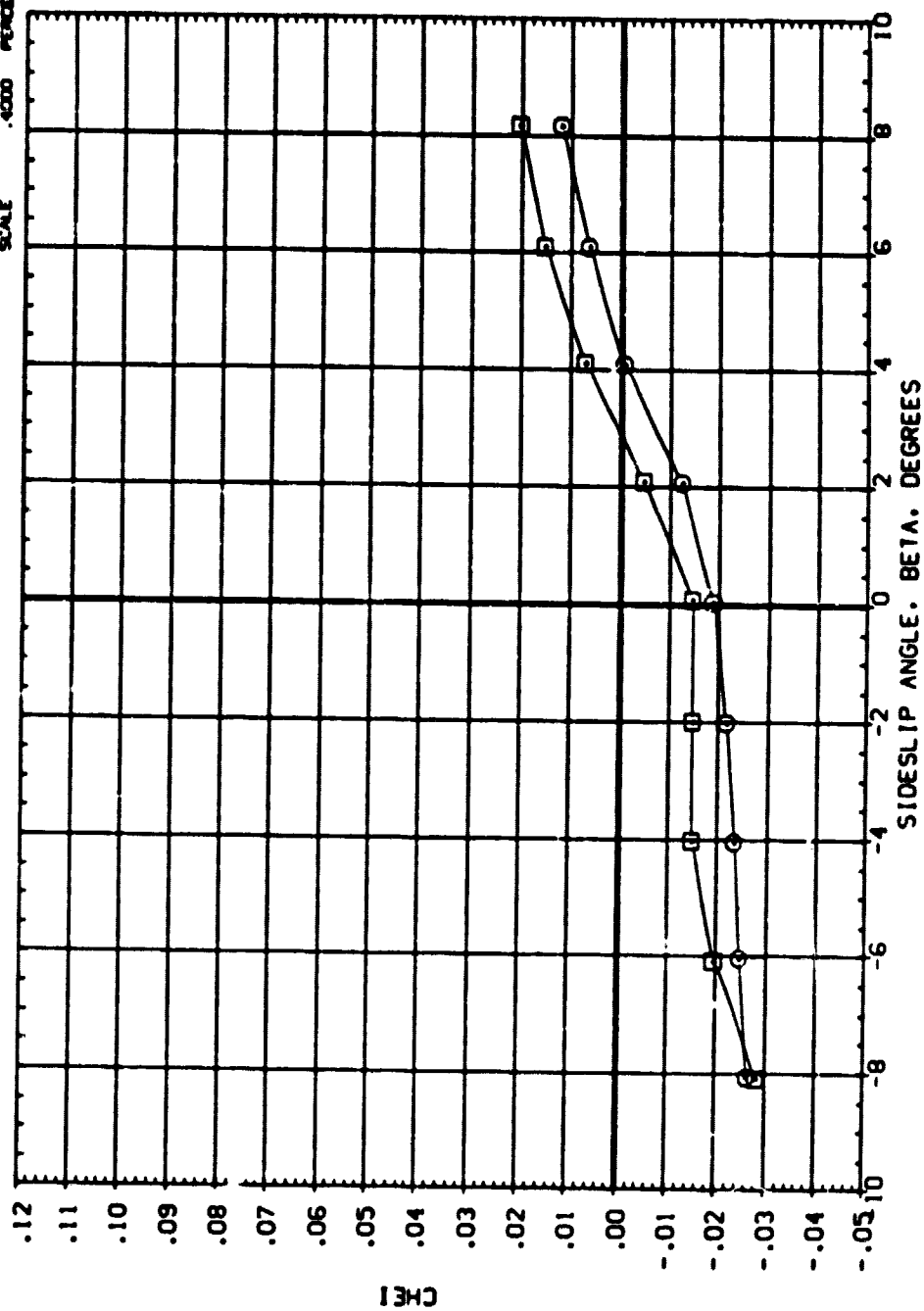


EFFECT OF ET PROTUBERANCES

(A) MACH = .60

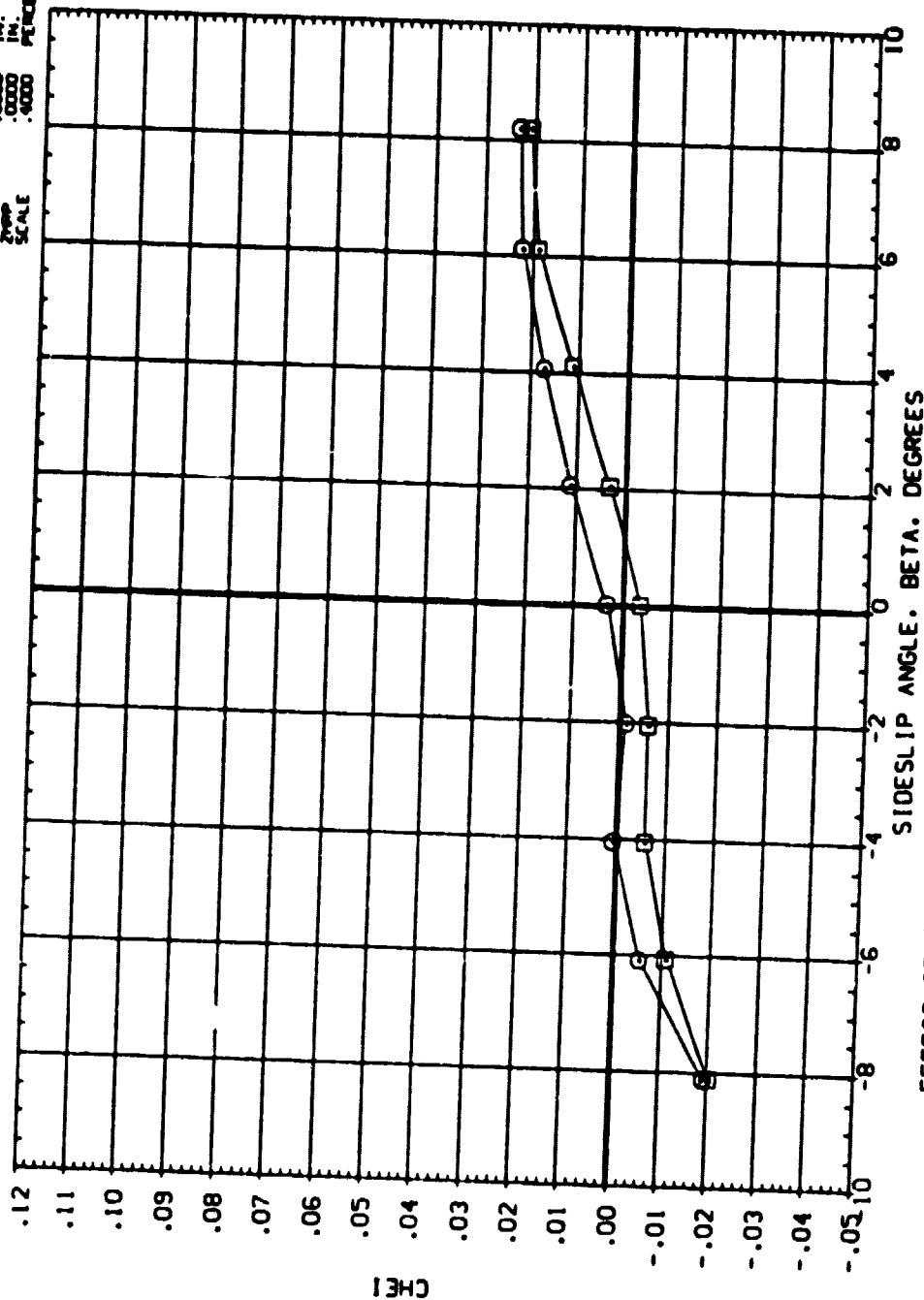
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(F28756)	FA28. MSFC TVT 636.	CONF IG. 02NZE28PAAT7353
(F28759)	FA28. MSFC TVT 656.	CONF IG. 02NZE28PAAT7353

REFERENCE INFORMATION	
SREF	6.1980 IN.
LAUF	5.1612 IN.
REF	2.7470 IN.
REF	2.7120 IN.
WHP	.0000 IN.
WHP	.0000 IN.
SCALE	.0000 PERCH



DATA SET SYMBOL: CONFIDURATION DESCRIPTION
 (FA2055) B FA2B. MSFC TVT 656. CONF IG. C0NVEZ00AA11353
 (FA2055) B FA2B. MSFC TVT 656. CONF IG. C0NVEZ00AA11353

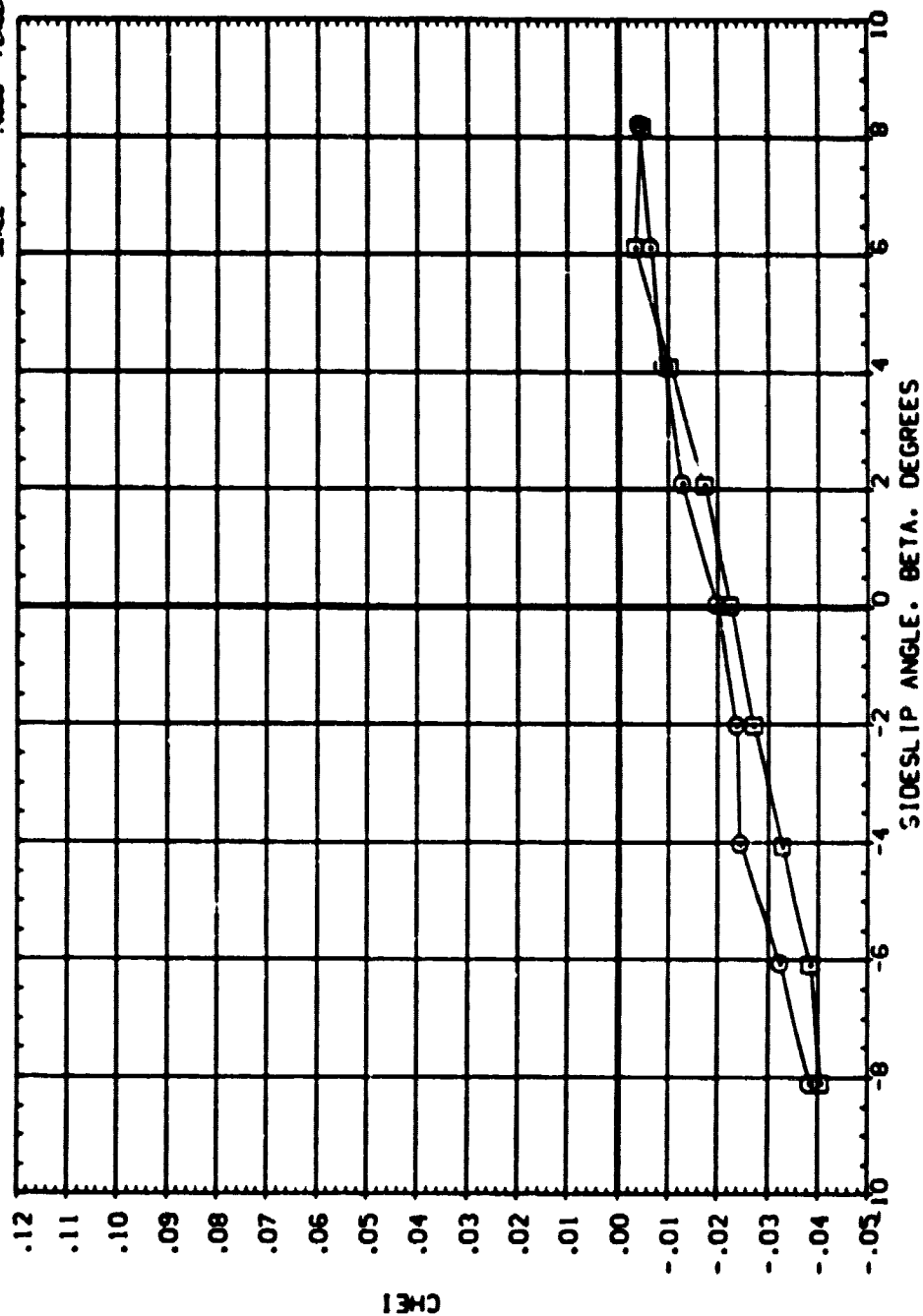
REFERENCE INFORMATION
 SET 6.1800 90. IN
 LREF 5.1612 10. IN
 BREF 3.7475 10. IN
 WREF 2.7120 10. IN
 ZREF .0000 10. IN
 SCALE .0000 FEET/IN



EFFECT OF ET PROTUBERANCES

(C)MACH = 1.05

SOURCE INFORMATION	
REF	6-1380 IN.
LEV	5-1612 IN.
SEC	2-7476 IN.
WAP	2-7120 IN.
WAP	.0000 IN.
WAP	.0000 IN.
SCALE	.0000 FEET

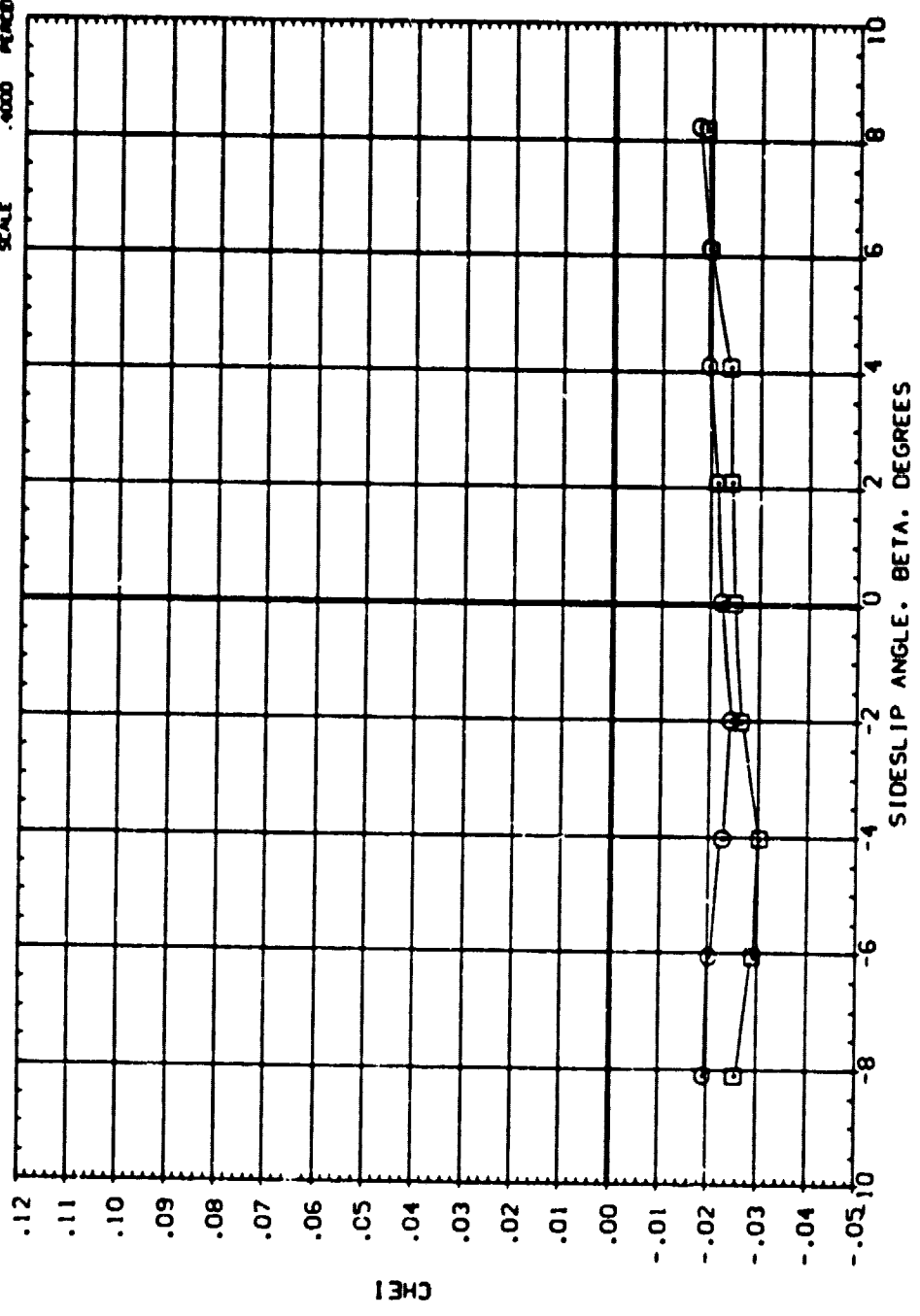


EFFECT OF 5 α PROTUBERANCES

(D)MACH = 1.10

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA205) □ FA20. MSC TVT 656. CONF IG. 02VZL20MAAT1353
 (FA205) □ FA20. MSC TVT 656. CONF IG. 02VZL20MAAT1353

REFERENCE INFORMATION
 QREF 6.1983 90. 14
 LREF 3.1612 14.
 MREF 2.7470 14.
 WREF 2.7120 14.
 ZREF .0000 14.
 SCALE .4000 PERCENT

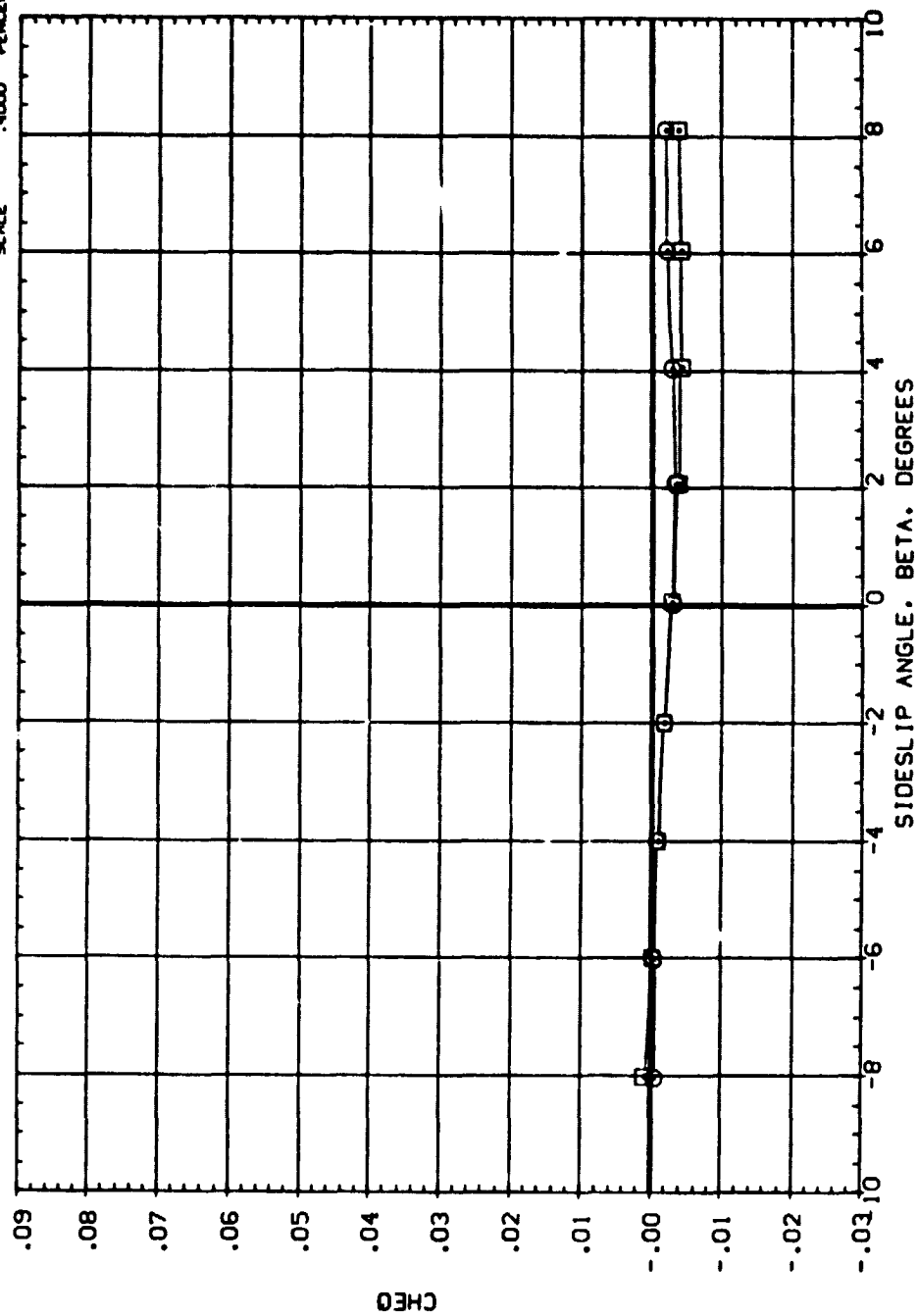


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.25

DATA SET SYMBOL: \square CONFIGURATION DESCRIPTION:
 (FA2856) FA28. MSFC TWT 656. CONFIG. 02N2E2MMAATT353
 (FA2859) FA28. MSFC TWT 656. CONFIG. 02N2E2MMAATT353

REFERENCE INFORMATION:
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YPROP 2.7120 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

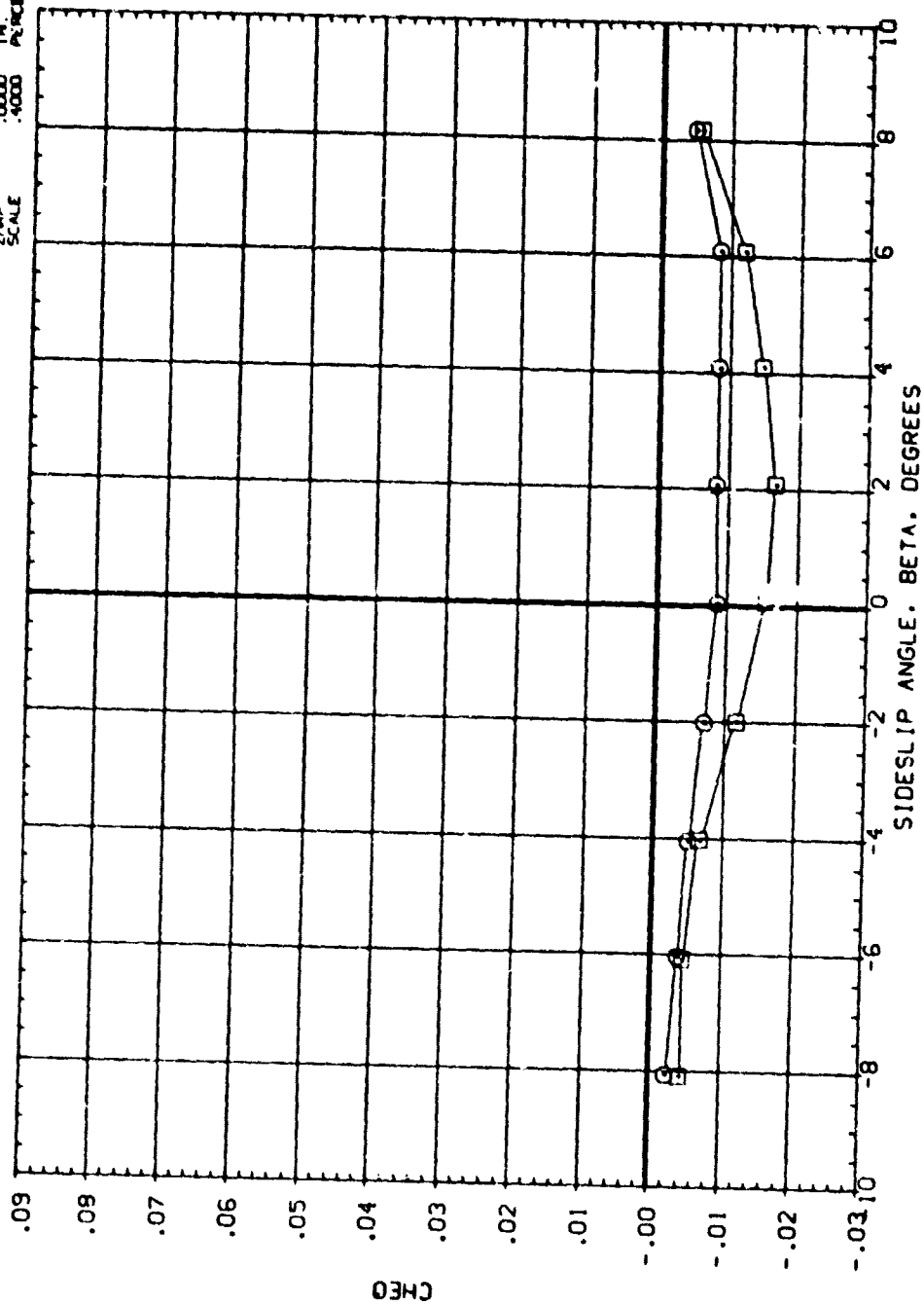


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2856) \square FA28. MSFC TWT 656. CONFIG. ONZE28MAATT53
 (FA2859) \square FA28. MSFC TWT 656. CONFIG. ONZE28MAATT53

REFERENCE INFORMATION
 SREF 6.1280 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



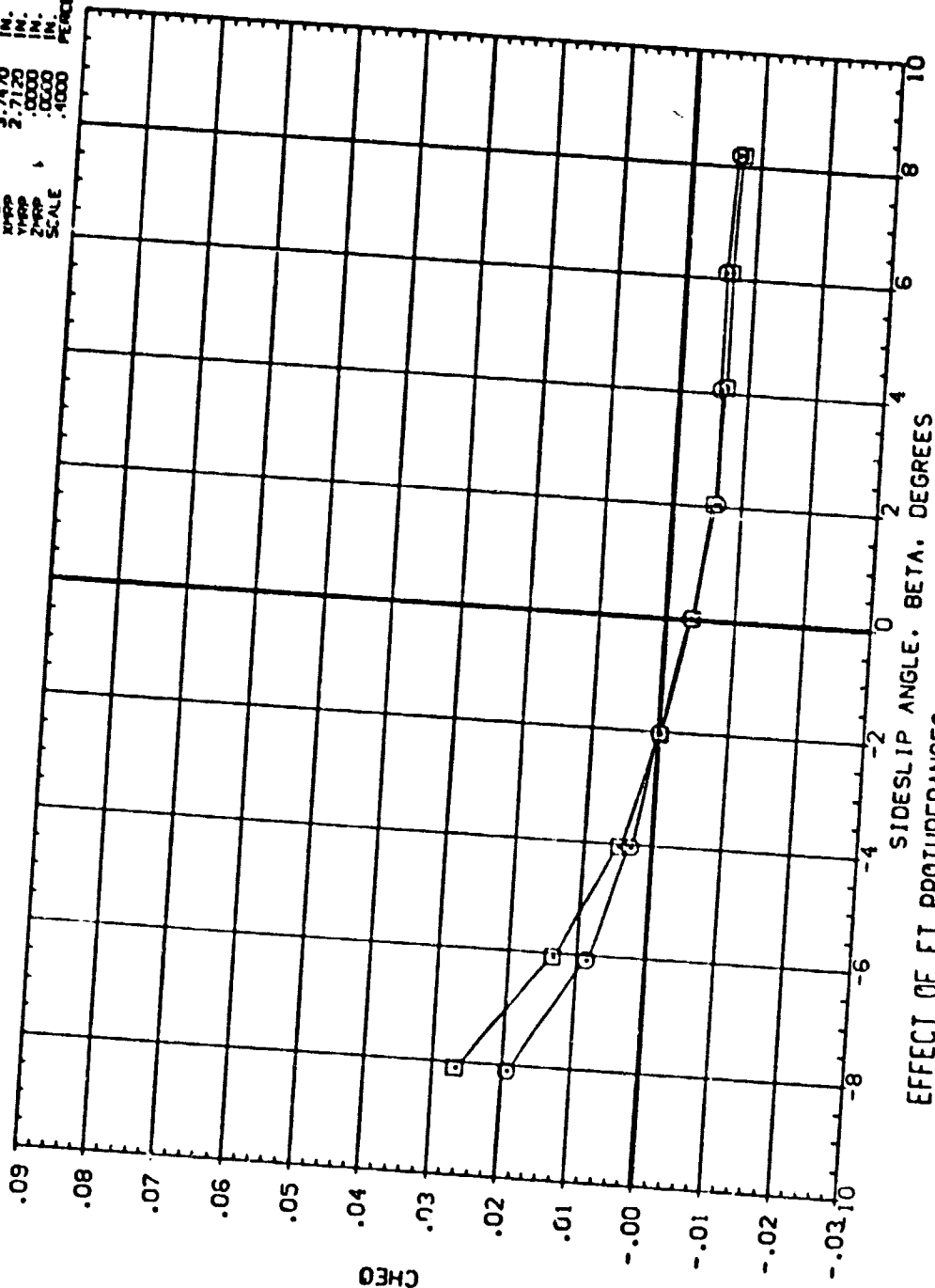
EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL: 8
 (FA2556)
 (FA2559)

CONFIGURATION DESCRIPTION
 FA28. MSFC TVT 656. COF IG. 0.2VZE2WAAATT353
 FA28. MSFC TVT 656. COF IG. 0.2VZE2WAAATT353

REFERENCE INFORMATION
 SREF 6.1580 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE 1.0000 PERCENT

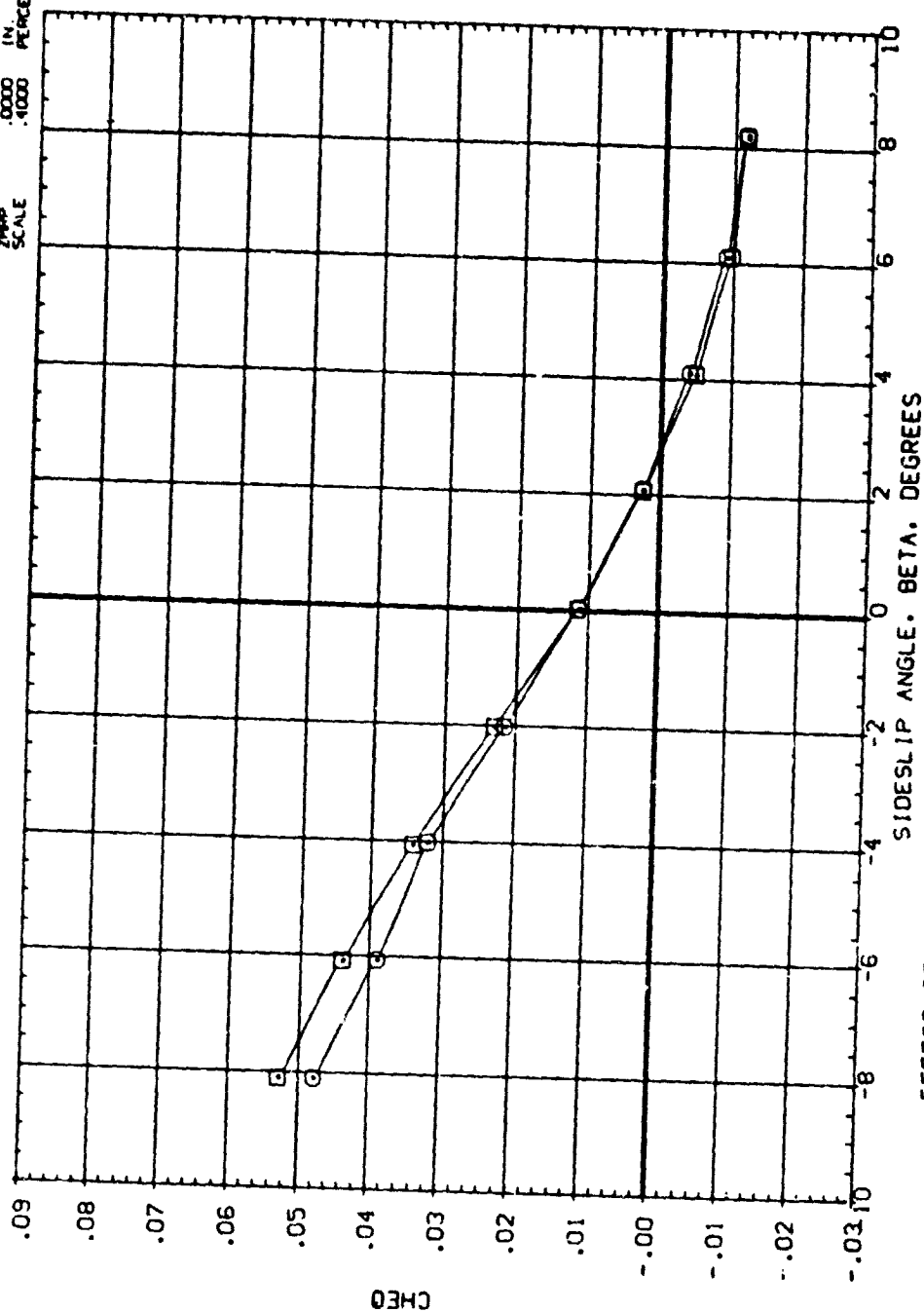


EFFECT OF ET PROTUBERANCES
 (C)MACH = 1.05

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DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2856) 8 FA28. M5FC INT 556. CONF 10. 3DVEZPMAATT353
 (FA2858) 8 FA28. M5FC INT 556. CONF 10. 3DVEZPMAATT353

REFERENCE INFORMATION
 SREF 8.1580 SQ. IN.
 LREF 5.1612 IN.
 WREF 3.7470 IN.
 WAPP 2.7120 IN.
 ZAPP .0000 IN.
 SCALE .0000 PERCENT

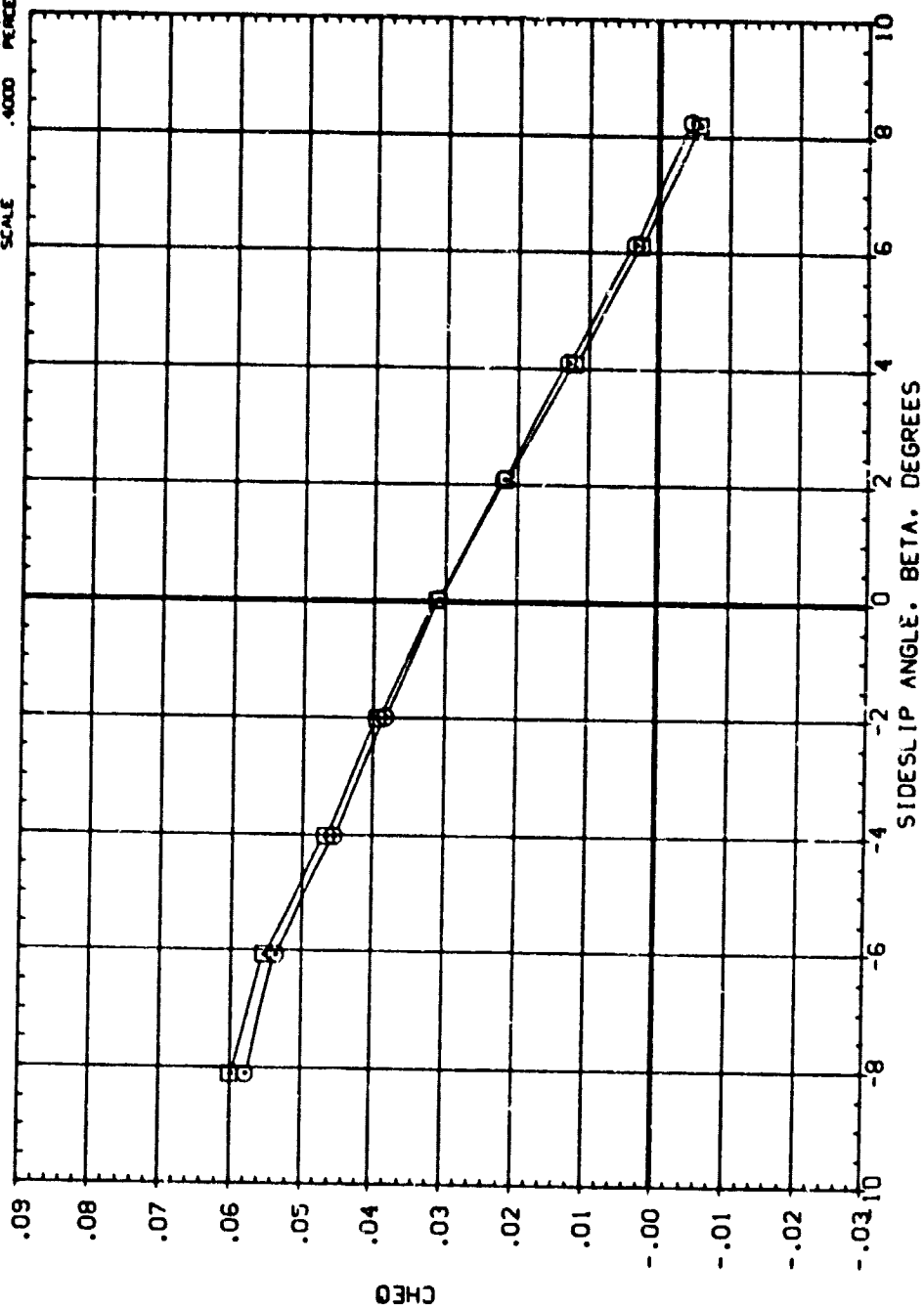


EFFECT OF ET PROTUBERANCES

(0)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (F12856) 8 PA28. MSFC TWT 656. CONFIG. CONVEZMANAATT353
 (F12855) 8 PA28. MSFC TWT 656. CONFIG. CONVEZMANAATT353

REFERENCE INFORMATION
 SPEC 6.1880 50. IN
 LREF 5.1812 IN.
 BREF 2.1470 IN.
 YREF 2.7120 IN.
 YPROP 0.000 IN.
 ZPROP 0.000 IN.
 SCALE .0000 PERCENT

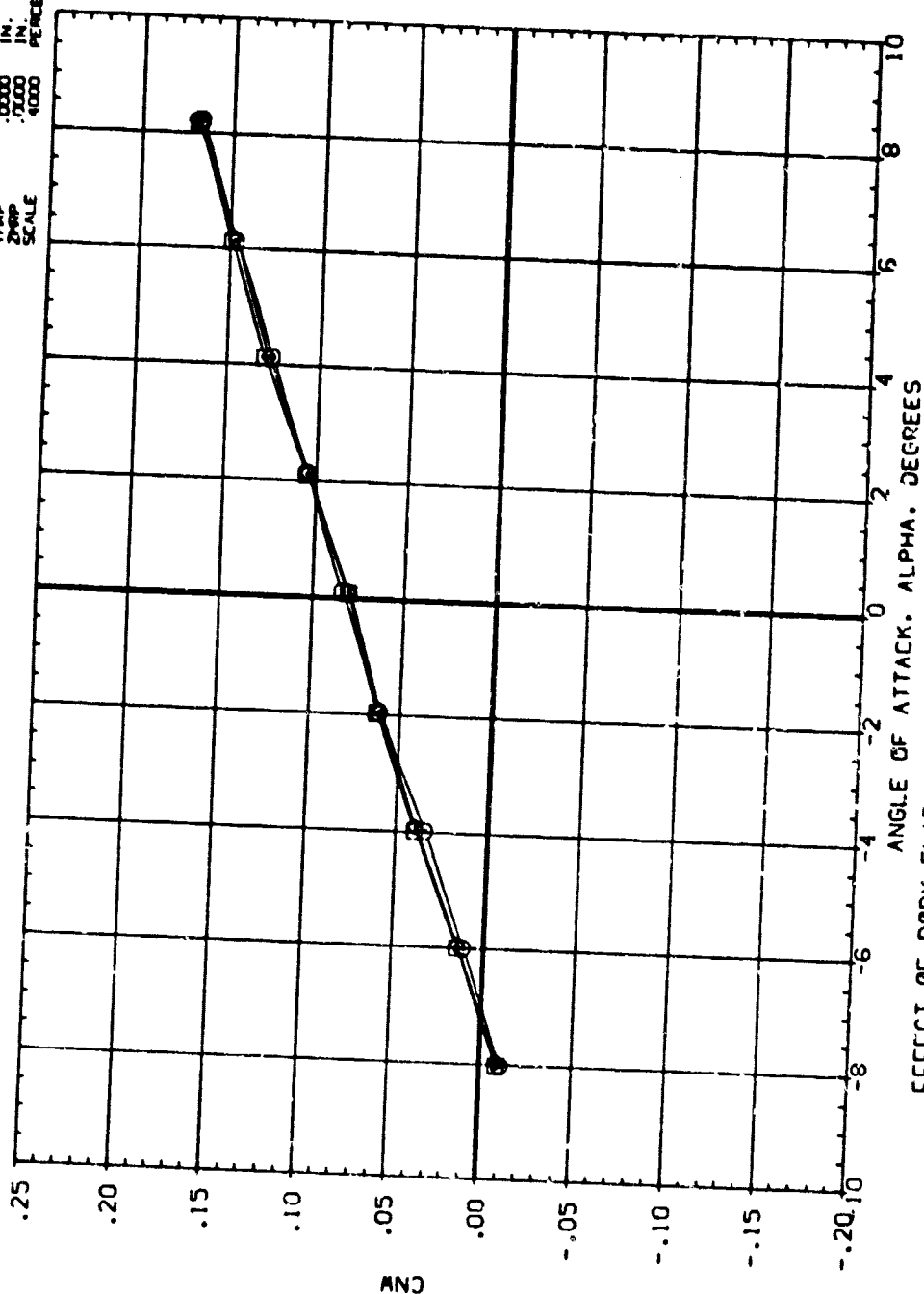


EFFECT OF ET PROTUBERANCES

(C)MACH = 1.25


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) FA28. MSFC TWT 656. CONF 10. 02NZE2NPAATT353
 (FA2860) FA28. MSFC TWT 656. CONF 10. 02NZE2NPAATT353
 (FA2863) FA28. MSFC TWT 656. CONF 10. 02NZE2NPAATT353

REFERENCE INFORMATION
 SHEET 5.1880 90. IN
 LREF 5.1812 IN.
 BREF 3.2470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE 4000 PERCENT

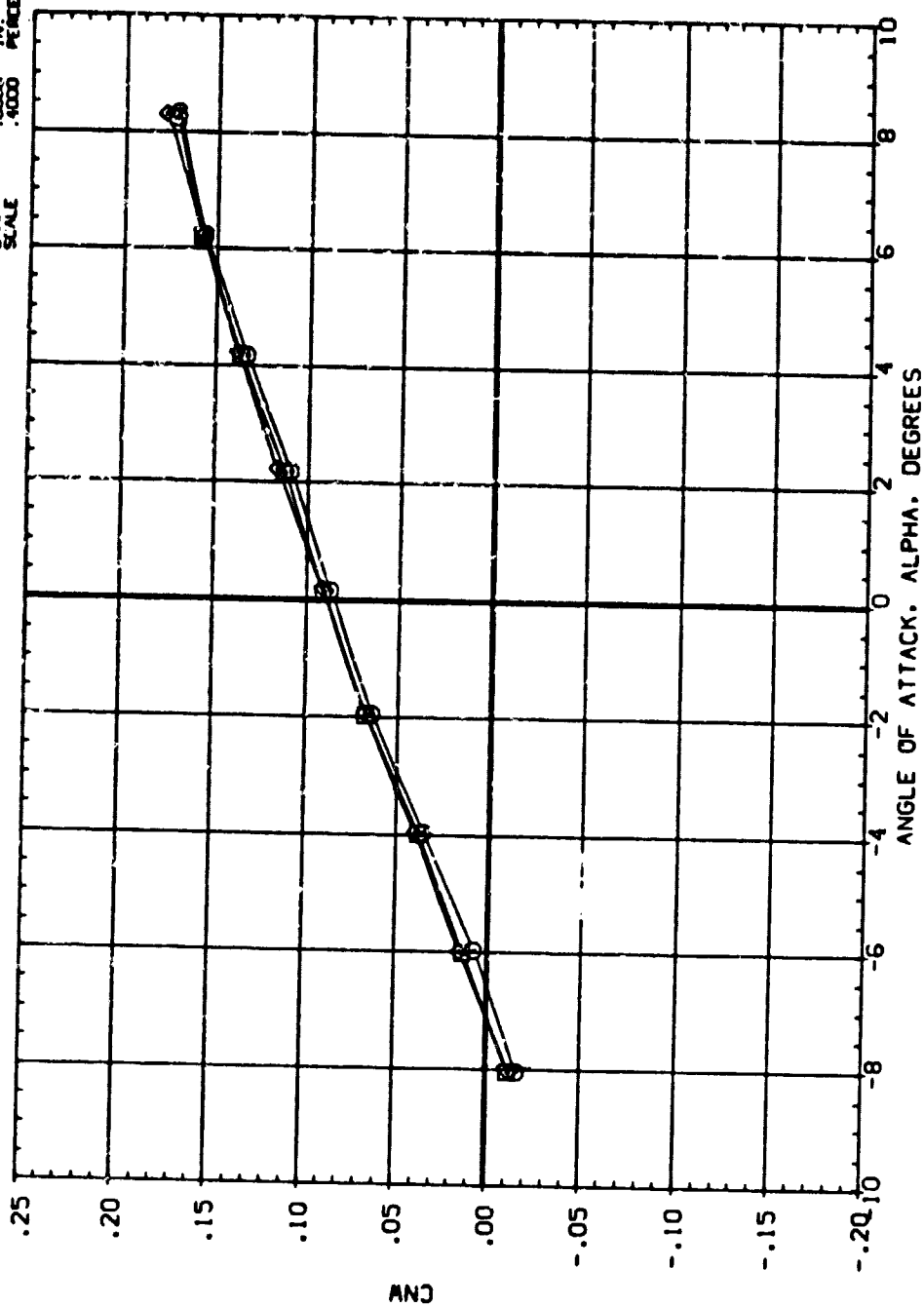


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION
 (FA2828) FA28: MSC TVT 656: CONFIG. 0212Z28PAATT353
 (FA2860) FA28: MSC TVT 656: CONFIG. 0212Z28PAATT353
 (FA2863) FA28: MSC TVT 656: CONFIG. 0212Z28PAATT353

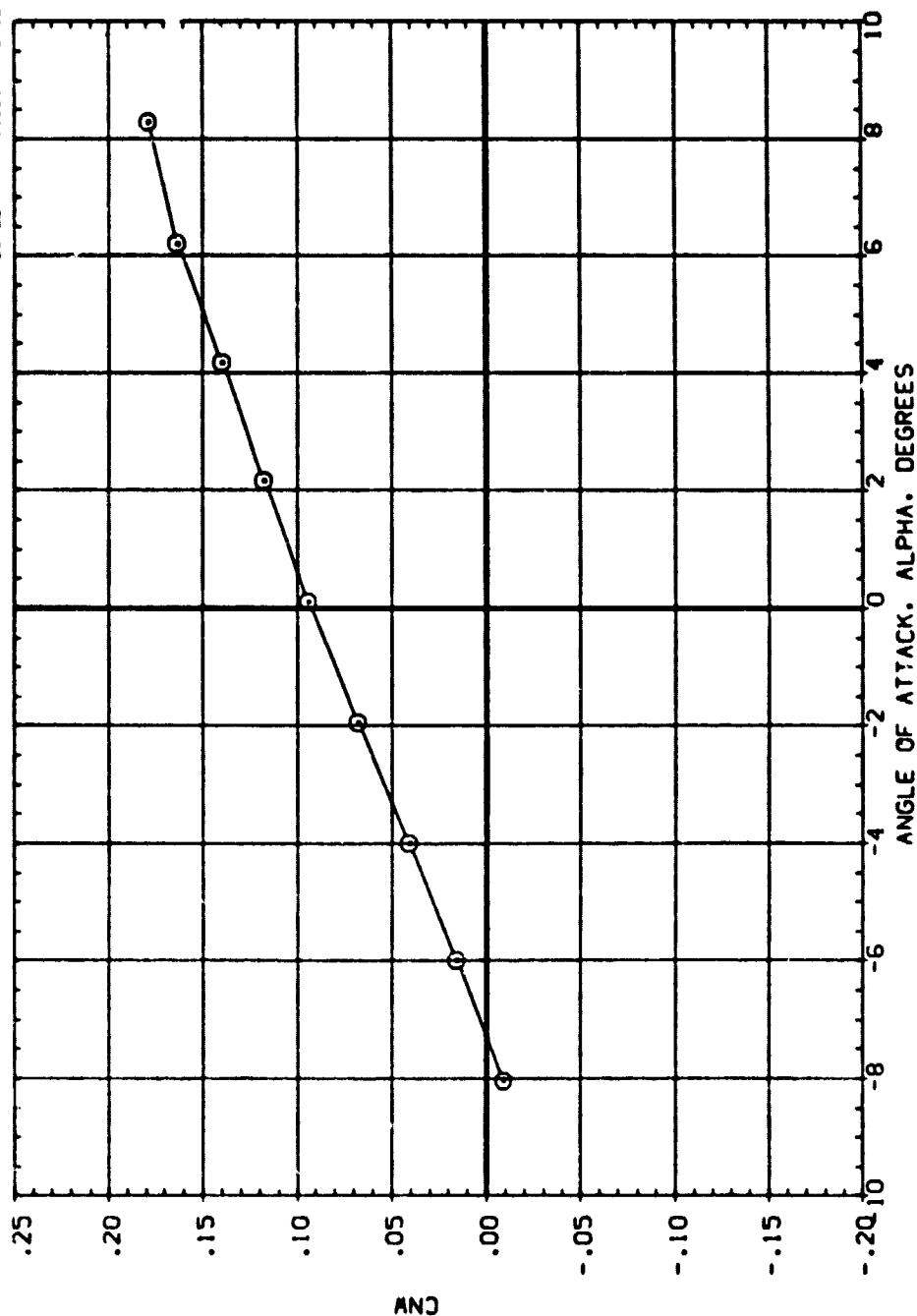
REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF BODY FLAP

(S)MACH = .90

REFERENCE INFORMATION	
SREF	6.1980 IN.
LREF	5.1612 IN.
SREF	3.7470 IN.
XREF	2.7120 IN.
YREF	.0000 IN.
ZREF	.0000 IN.
SCALE	.0000 PERCENT

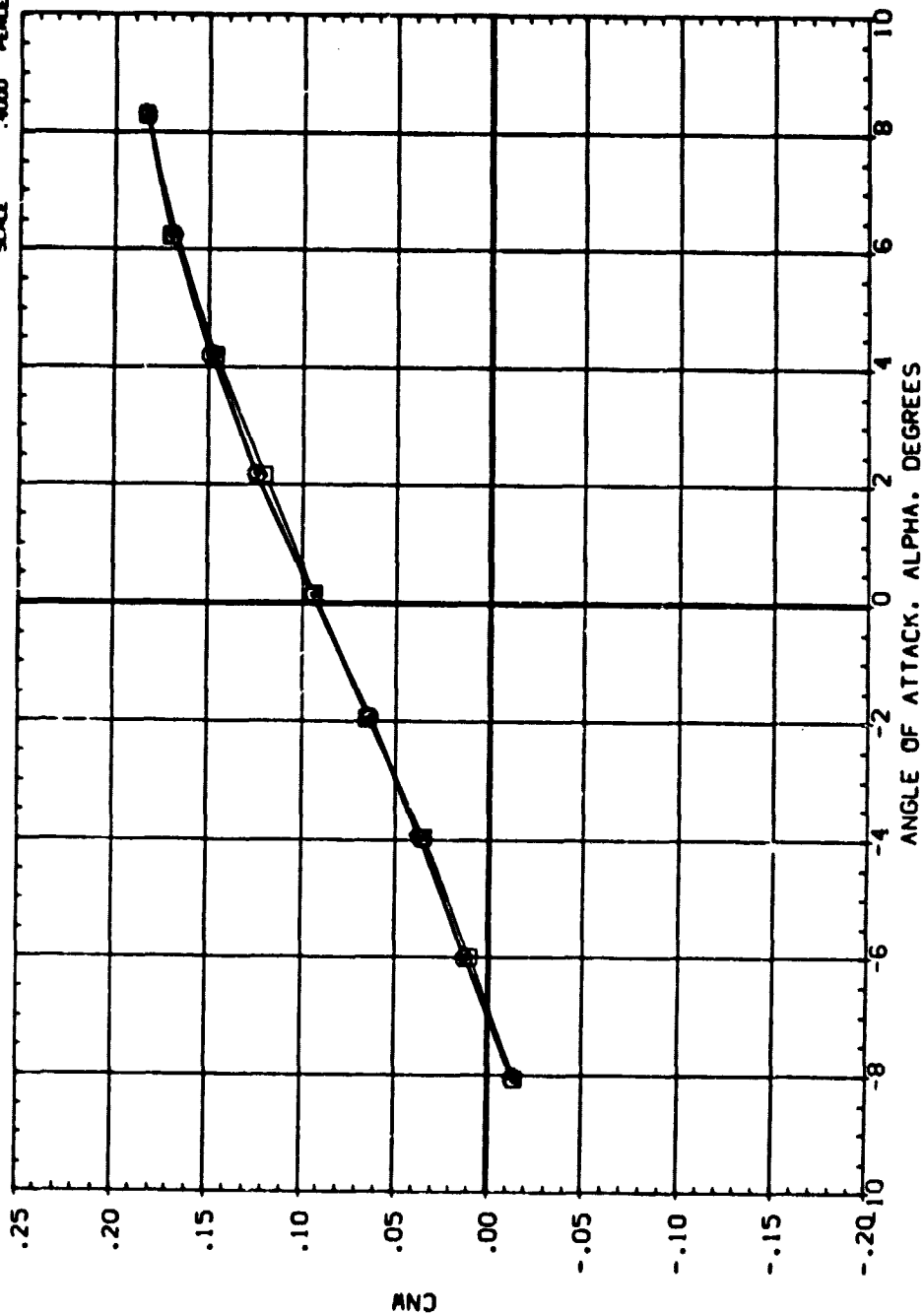


EFFECT OF BODY FLAP

$$(C)_{MACH} = .95$$

DATA SET SYMBOL CONFIGURATION DESCRIPTION REFERENCE INFORMATION

(FA2558)	FA28. M5C TWT 656. CONF IG. 02N2E2M0PAATT353	REF 8.1800 IN.
(FA2650)	FA28. M5C TWT 656. CONF IG. 02N2E2M0PAATT353	REF 3.1612 IN.
(FA2653)	FA28. M5C TWT 656. CONF IG. 02N2E2M0PAATT353	REF 2.7478 IN.
		REF 2.7120 IN.
		REF .0300 IN.
		REF .0000 IN.
		SCALE .0000 PER IN.



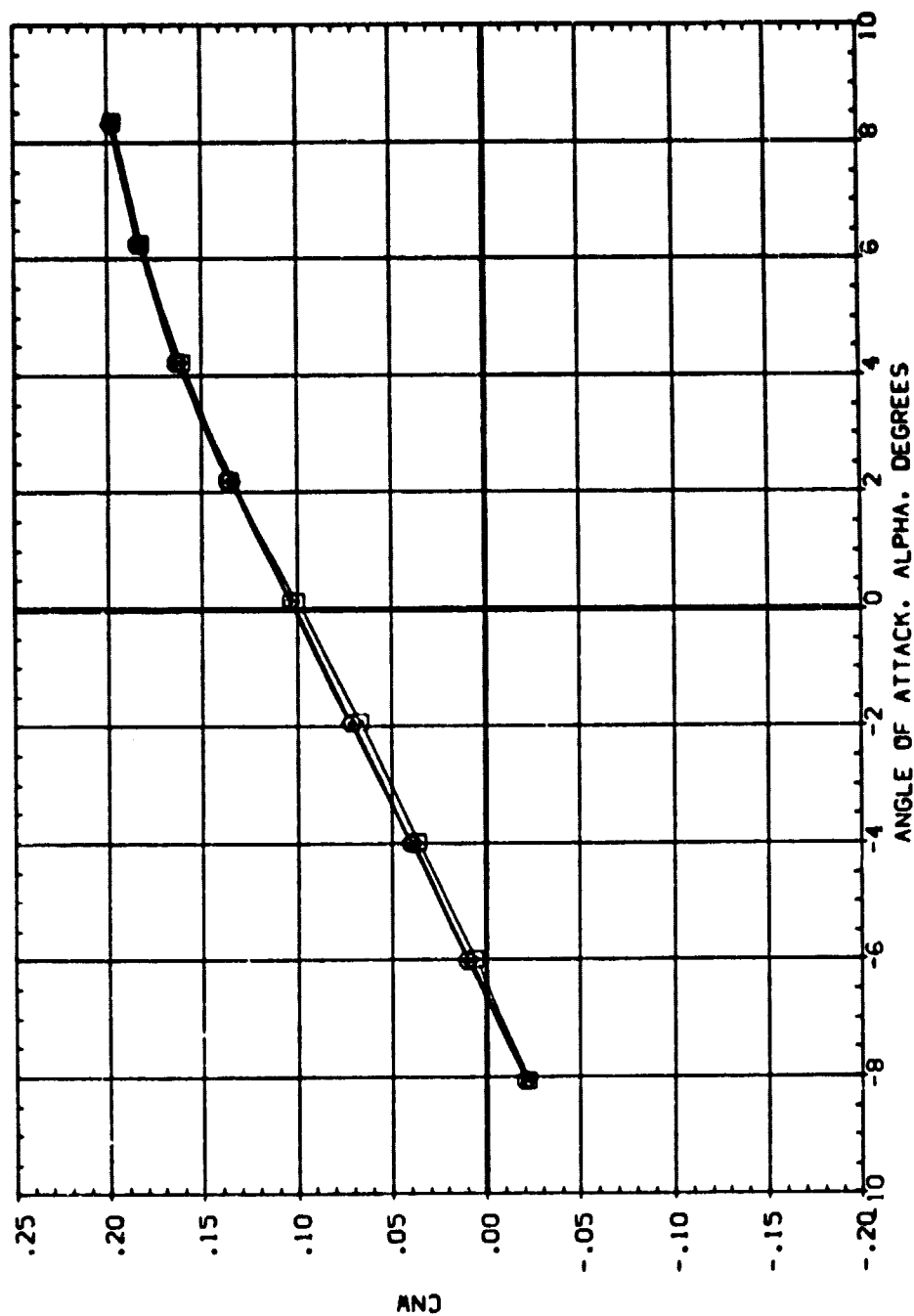
EFFECT OF BODY FLAP

(0)MACH = 1.95

DATA SET SYMBOL: 8

CONFIGURATION DESCRIPTION:
 FA28: MSFC TWT 656. COF IG. QZNXZPAPAT1353
 FA28: MSFC TWT 656. COF IG. QZNXZPAPAT1353
 FA28: MSFC TWT 656. COF IG. QZNXZPAPAT1353

REFERENCE INFORMATION:
 SREF 6.1890 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

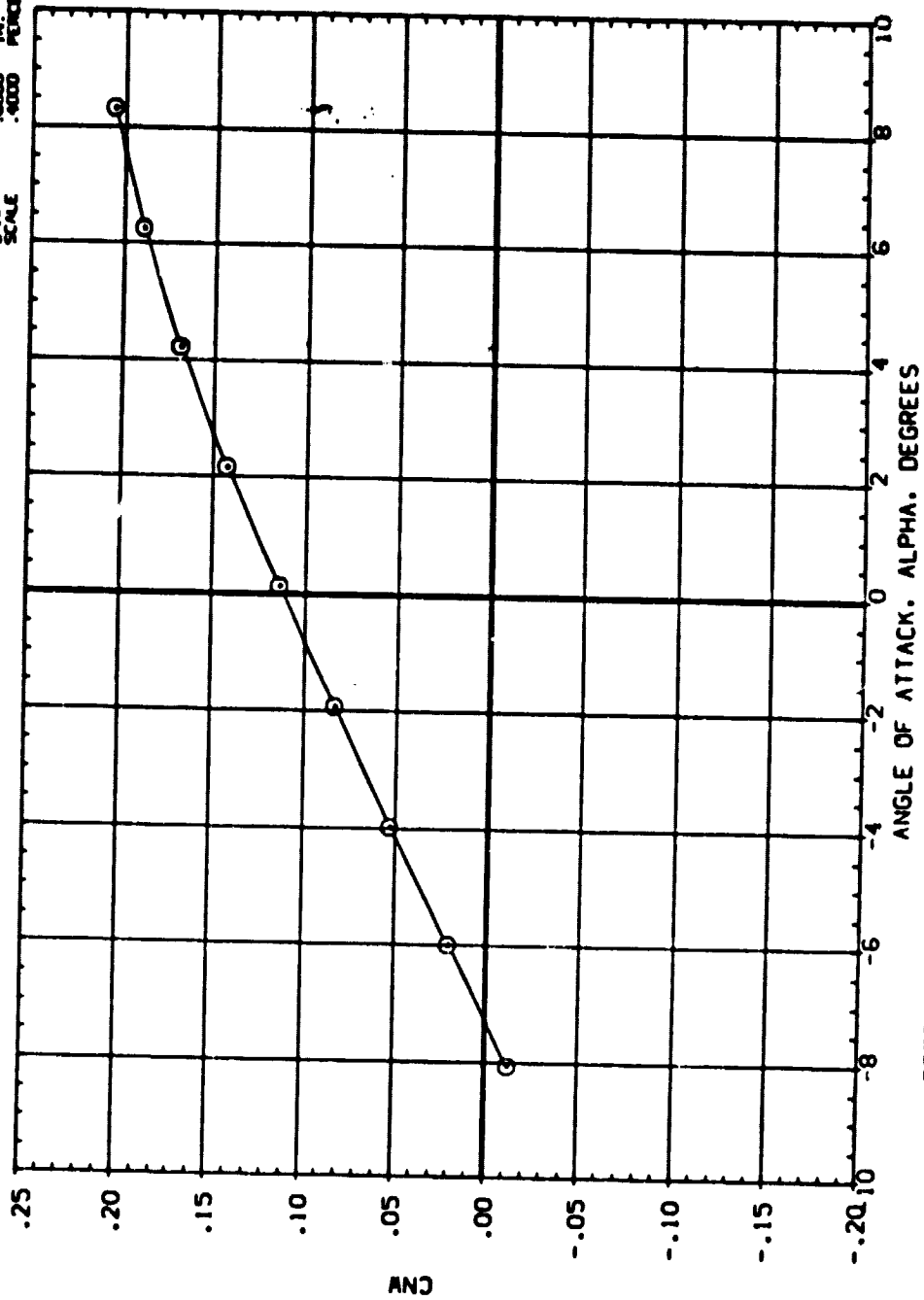


EFFECT OF BODY FLAP

(E)MACH = 1.10


DATA SET SYMBOL: 0
 CONFIGURATION DESCRIPTION: FA20, MSFC, TUT, 656, CONFIG. 00VZ2P0AATTJ303
 (FA2058) DATA NOT AVAILABLE
 (FA2060) DATA NOT AVAILABLE
 (FA2063)

REFERENCE INFORMATION
 SET: 6-1580 90 IN
 LIFT: 9-1812 100 IN
 DRIFT: 3-2470 100 IN
 YAW: 2-2120 100 IN
 ZWOP: -0000 100 IN
 SCALE: -4000 PERCENT

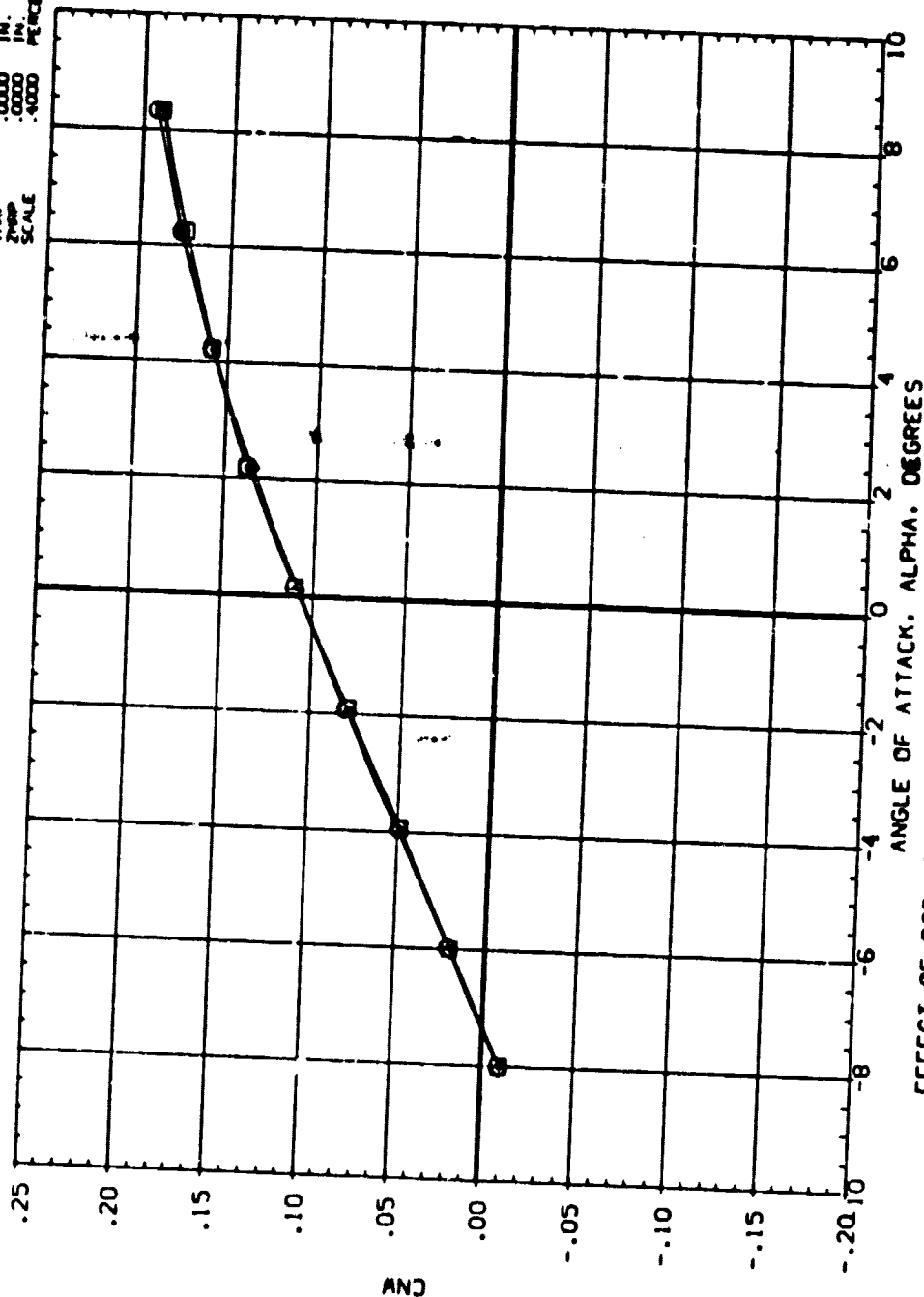


EFFECT OF BODY FLAP

(F)MACH = 1.15

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION
 (FA2858) FA28. MSC TWT 656. CONF 10. ORIGIN: 2000A17753
 (FA2859) FA28. MSC TWT 656. CONF 10. ORIGIN: 2000A17753
 (FA2863) FA28. MSC TWT 656. CONF 10. ORIGIN: 2000A17753

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 SCALE .4000 PERCENT

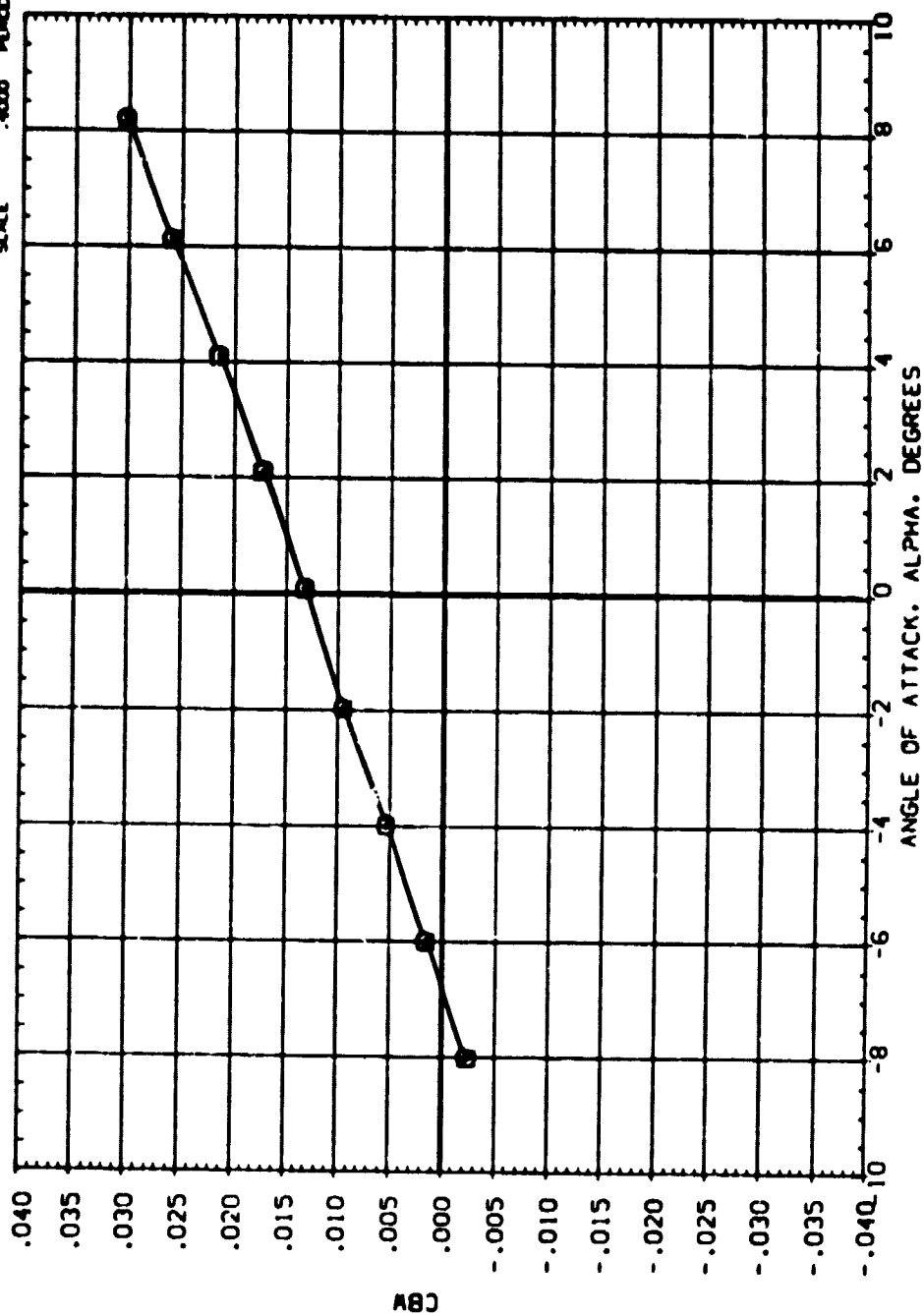


EFFECT OF BODY FLAP

(G)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2853) FA28: MSFC TUT 635: CONF IG. ONIZE 300AATT353
 (FA2850) FA28: MSFC TUT 636: CONF IG. ONIZE 300AATT353
 (FA2853) FA28: MSFC TUT 636: CONF IG. ONIZE 300AATT353

REFERENCE INFORMATION
 SET 6.1580 30. IN.
 UNIT 3.1612 IN.
 WING 2.7470 IN.
 TAIL 2.7120 IN.
 TAPER .0000 IN.
 SCALE .0000 PERCENT

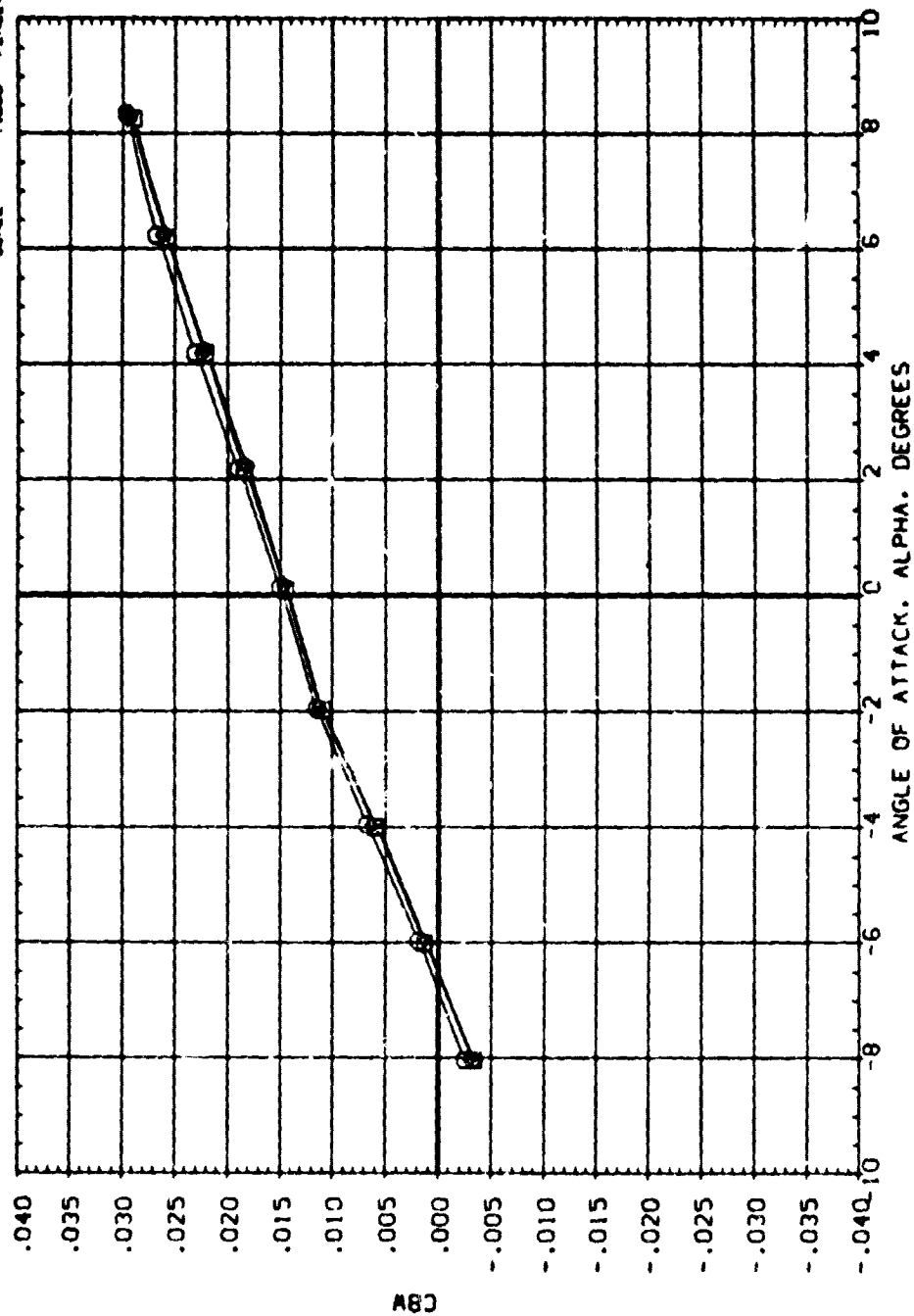


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL: 0
 (FA2801) (FA2801) (FA2801)
 CONFIGURATION DESCRIPTION:
 FA28: MSFC TUT 656: CONF 1G: ONIX 2000AATT253
 FA28: MSFC TUT 656: CONF 1G: ONIX 2000AATT253
 FA28: MSFC TUT 656: CONF 1G: ONIX 2000AATT253

REFERENCE INFORMATION:
 SHEET 6.1500 IN.
 LIFT 5.1612 IN.
 DRAG 3.7470 IN.
 YPRP 2.7120 IN.
 ZPRP .0000 IN.
 SCALE .0000 PERCENT

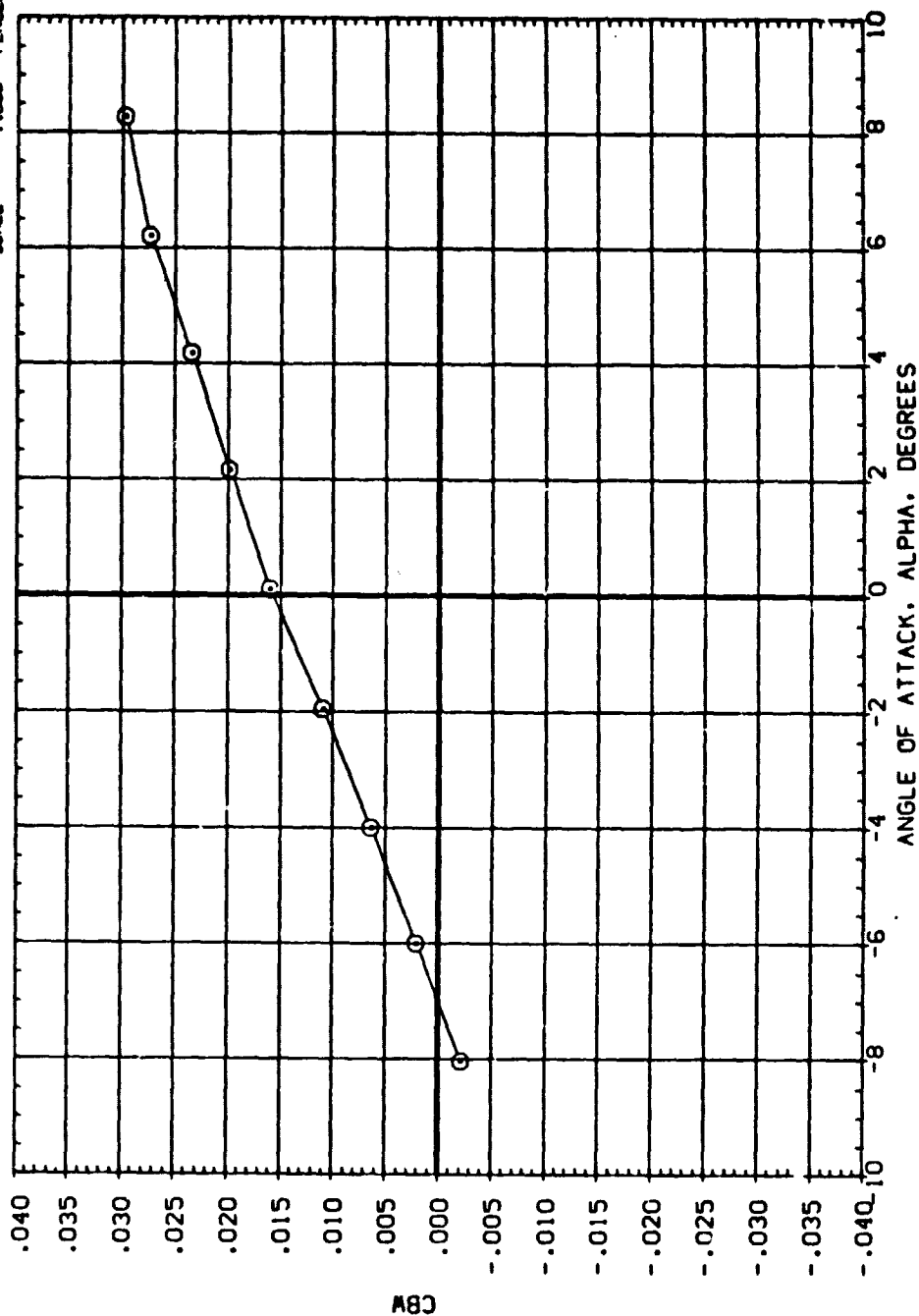


EFFECT OF BODY FLAP

(B)MACH = .90


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) FA28. HSC. TVT 656. CONFIG. 02V2E2M2PAA1T353
 (FA2860) DATA NOT AVAILABLE
 (FA2863) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

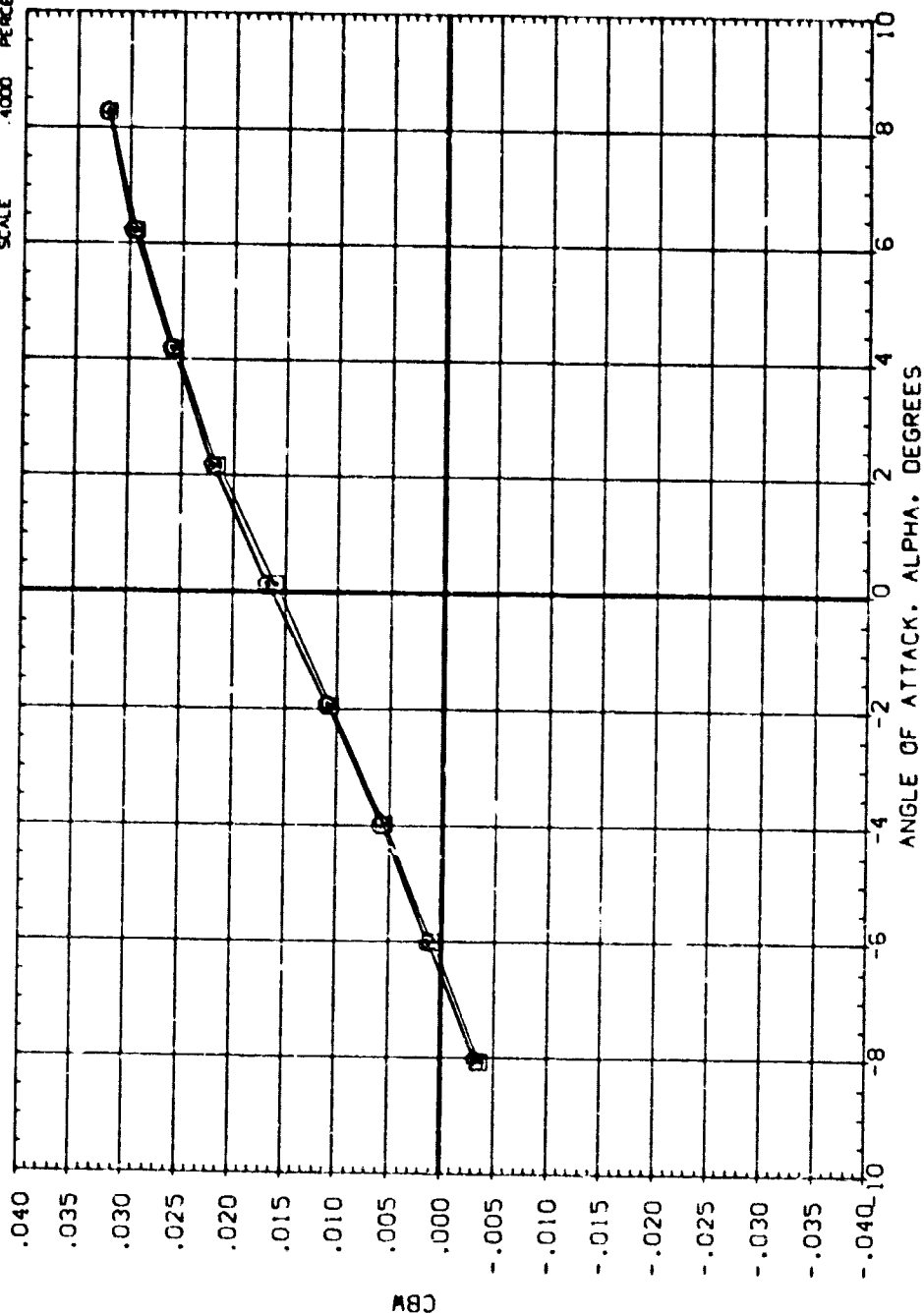


EFFECT OF BODY FLAP

(C)MACH = .95

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION: FA20: MSFC TVT 656: CONF IG: 0202E 20-PA111253
 (FA2058) (FA2060) (FA2063) FA20: MSFC TVT 656: CONF IG: 0202E 20-PA111253
 FA20: MSFC TVT 656: CONF IG: 0202E 20-PA111253

REFERENCE INFORMATION:
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF BODY FLAP

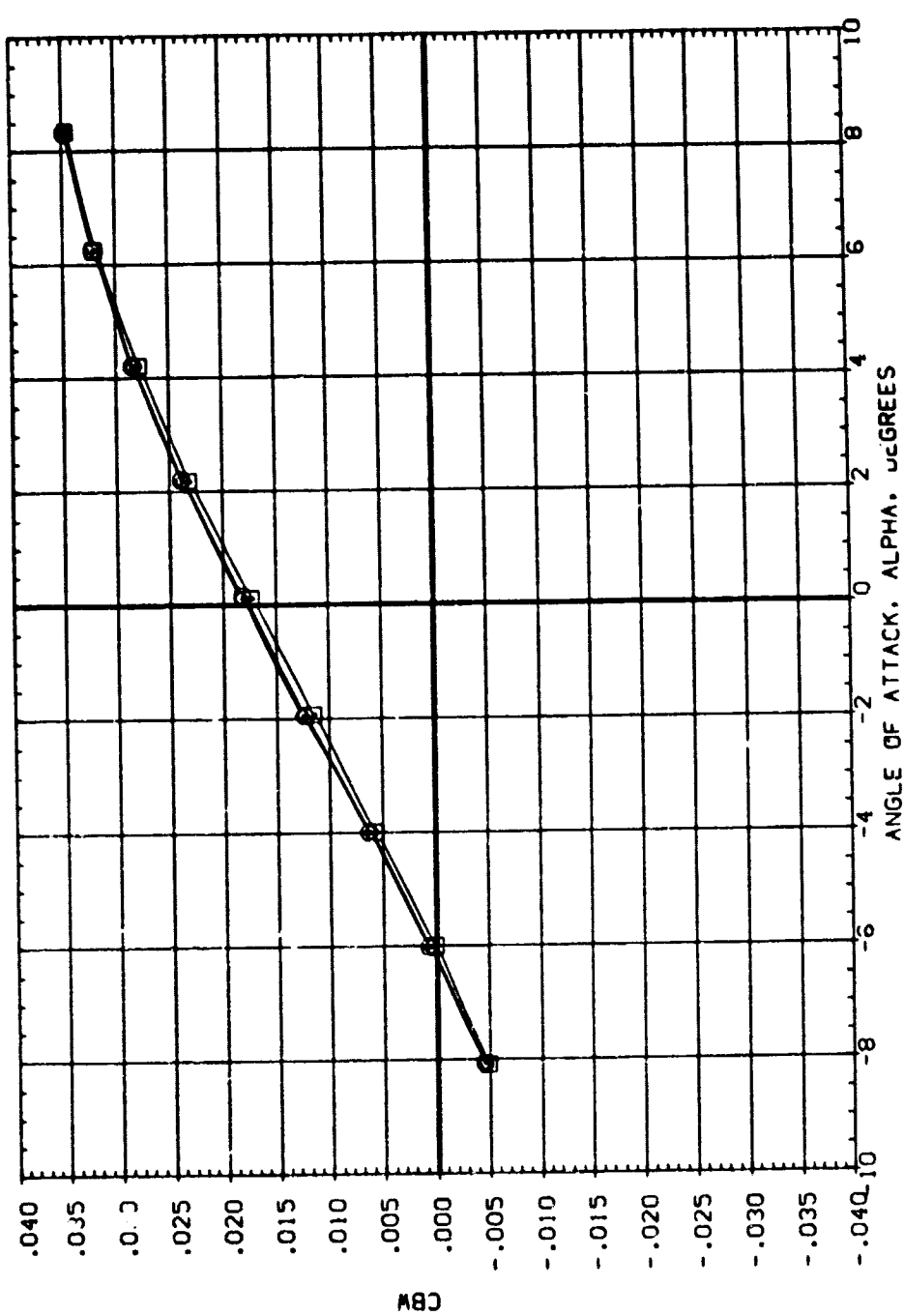
(0)MACH = 1.05

DATA SET SYMBO. CONFIGURATION DESCRIPTION

(FA2859)	FA28. MSC INT 656. CONF IG.	CONF 200PAA11353
(FA2860)	FA28. MSC INT 656. CONF IG.	CONF 200PAA11353
(FA2863)	FA28. MSC INT 656. CONF IG.	CONF 200PAA11353

REFERENCE INFORMATION

SREF	6.1580	90. IN
LREF	5.1612	IN.
BREF	3.7470	IN.
YREF	2.7120	IN.
ZREF	.0000	IN.
SCALE	.4000	PERCENT

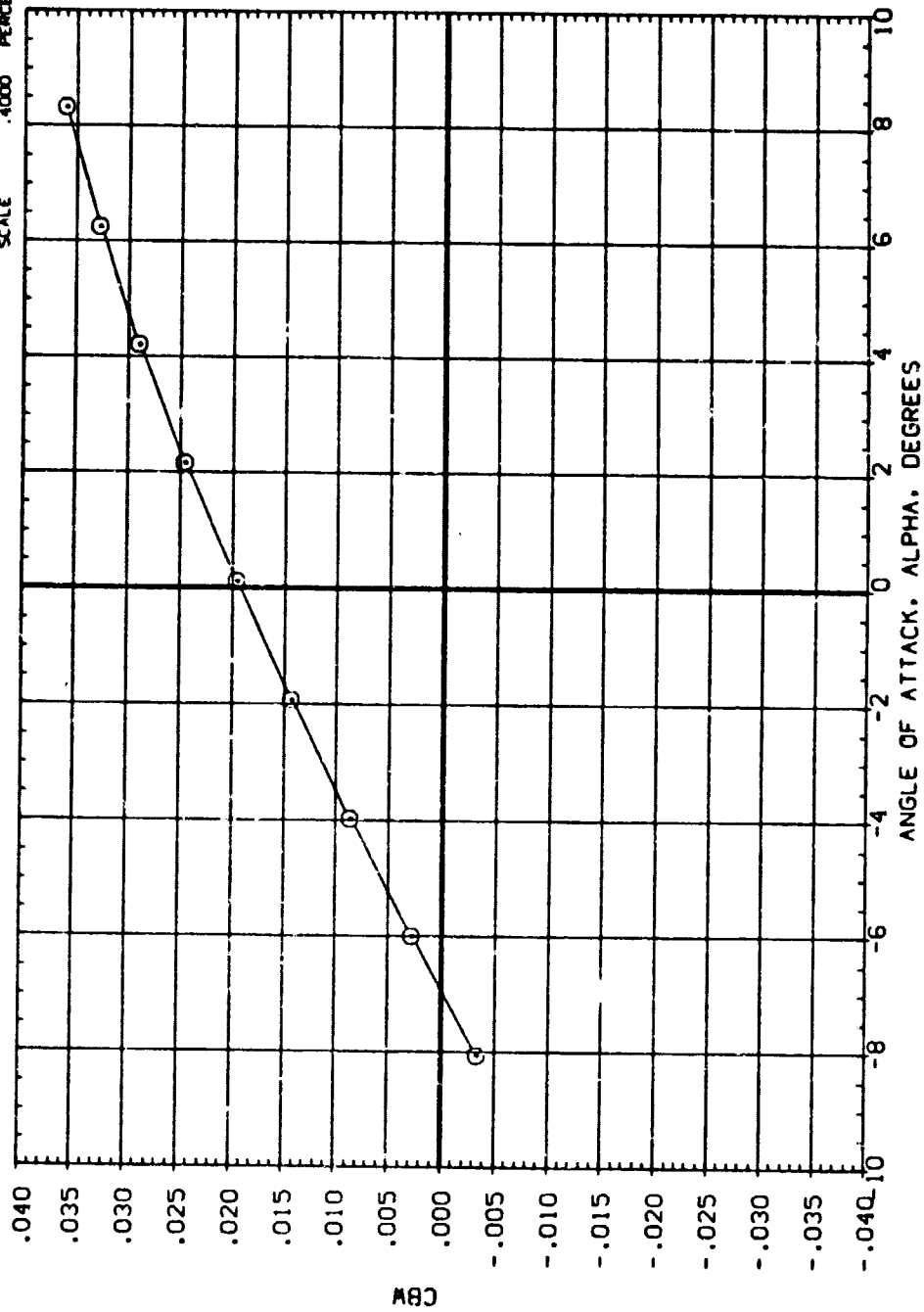


EFFECT OF BODY FLAP

(E)MACH = 1.10

DATA SET SYMBOL: FA28-MSFC TUT 656, CONFIG. 02V2E2M-PAAT1353
 (FA2858) DATA NOT AVAILABLE
 (FA2860) DATA NOT AVAILABLE
 (FA2863)

REFERENCE INFORMATION
 SREF 6.1586 SQ. IN.
 LREF 5.1611 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

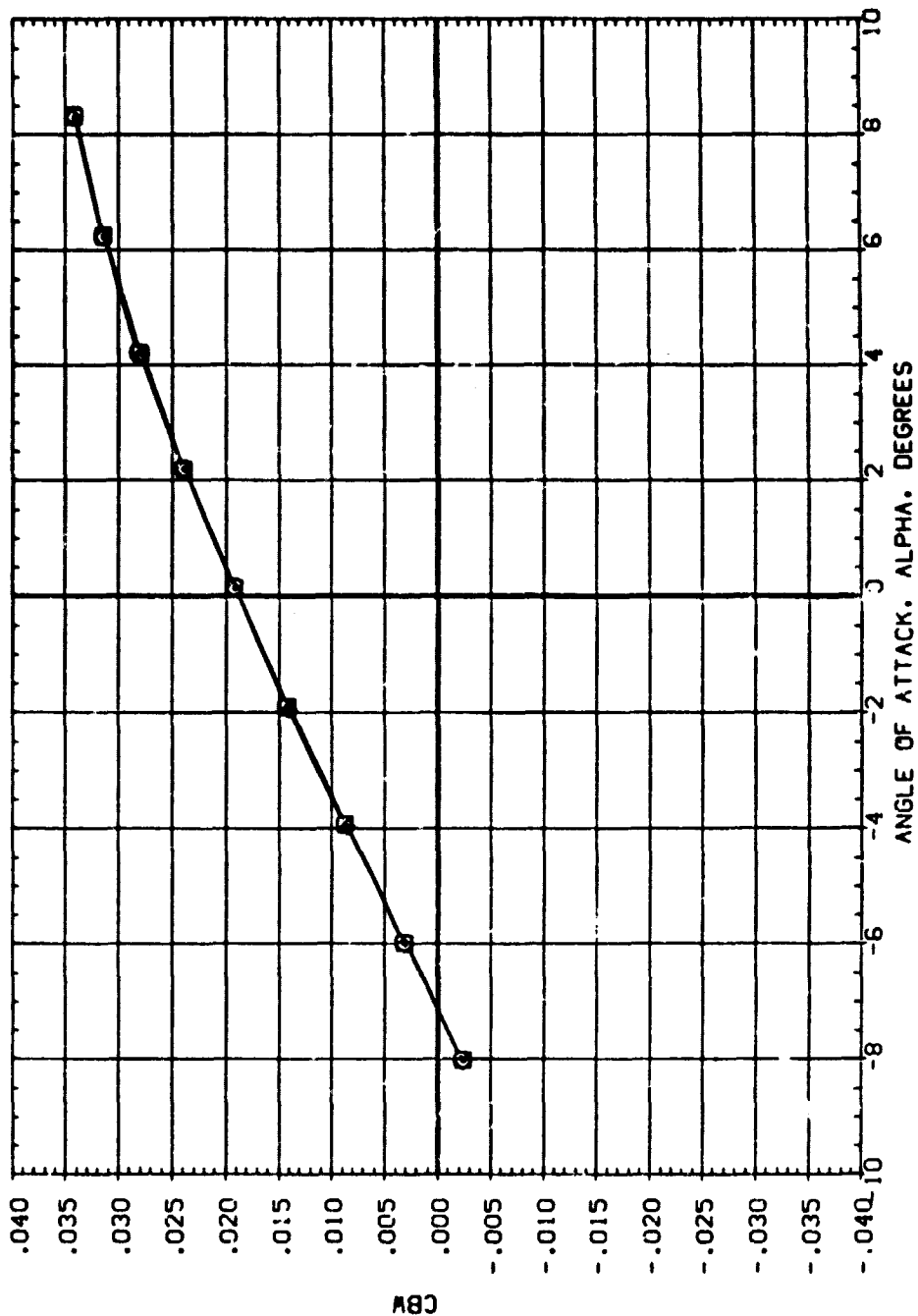


EFFECT OF BODY FLAP

(F)MACH = 1.15

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) FA28, MSFC TWT 656, CONF IG. 02NZE20PAATT353
 (FA2860) FA28, MSFC TWT 656, CONF IG. 02NZE20PAATT353
 (FA2863) FA28, MSFC TWT 656, CONF IG. 02NZE20PAATT353

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

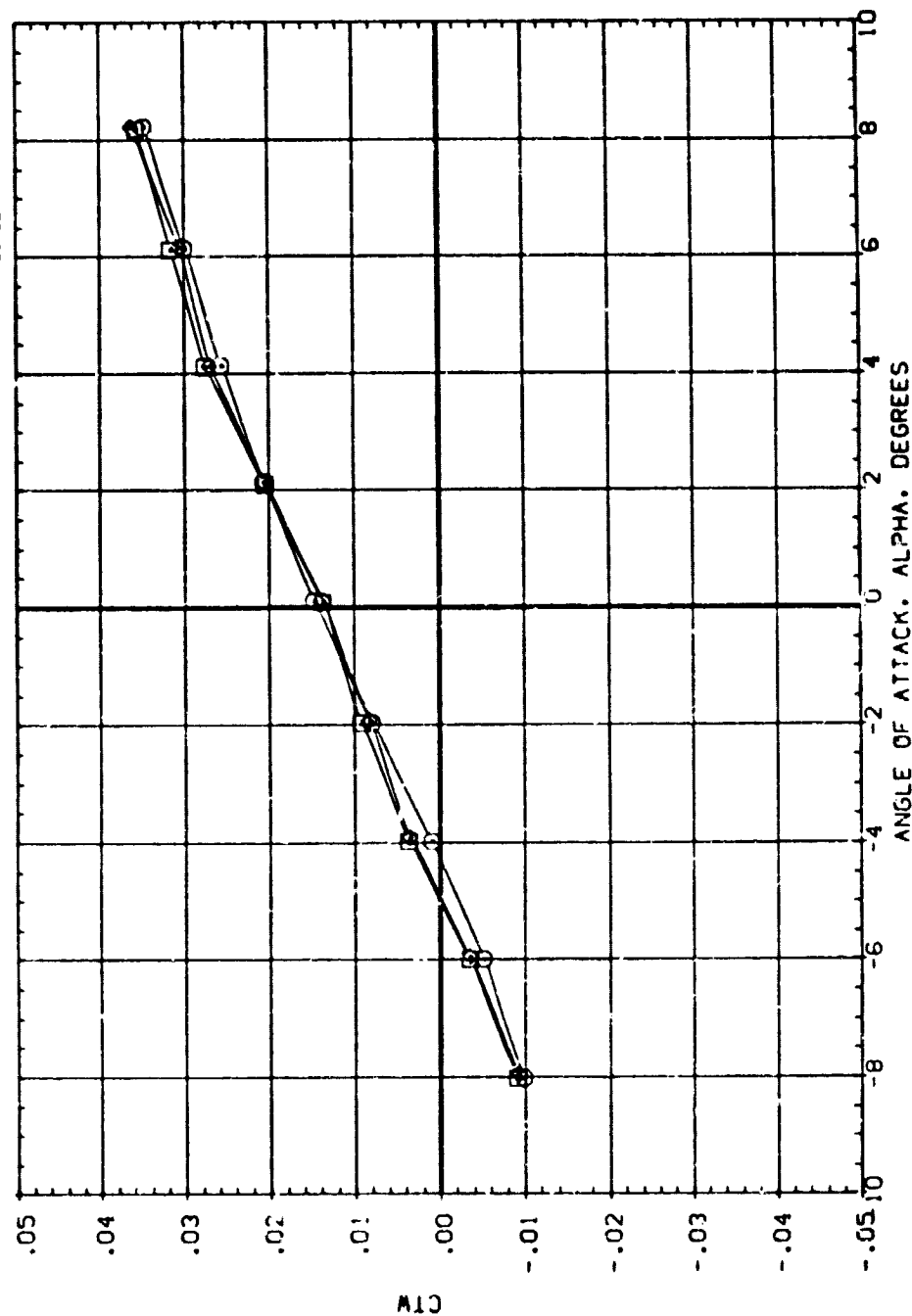


EFFECT OF BODY FLAP

(G)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION REFERENCE INFORMATION

(FA2858)	FA28: MSFC TWT 656: CONF IG. 02VZC2M0PAAAT7353	SREF	6.1500	50. IN
(FA2860)	FA28: MSFC TWT 656: CONF IG. 02VZC2M0PAAAT7353	LREF	5.1612	IN.
(FA2863)	FA28: MSFC TWT 656: CONF IG. 02VZC2M0PAAAT7353	BREF	3.7470	IN.
		WREF	2.7120	IN.
		ZREF	.0000	IN.
		SCALE	.4000	PERCENT



EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FA2858) M5C TWT 556. CONF IG. 02VZ2ZMPAATT353

(FA2860) M5C TWT 556. CONF IG. 02VZ2ZMPAATT353

(FA2863) M5C TWT 556. CONF IG. 02VZ2ZMPAATT353

REFERENCE INFORMATION

SREF 6.1580 IN.

LREF 5.1612 IN.

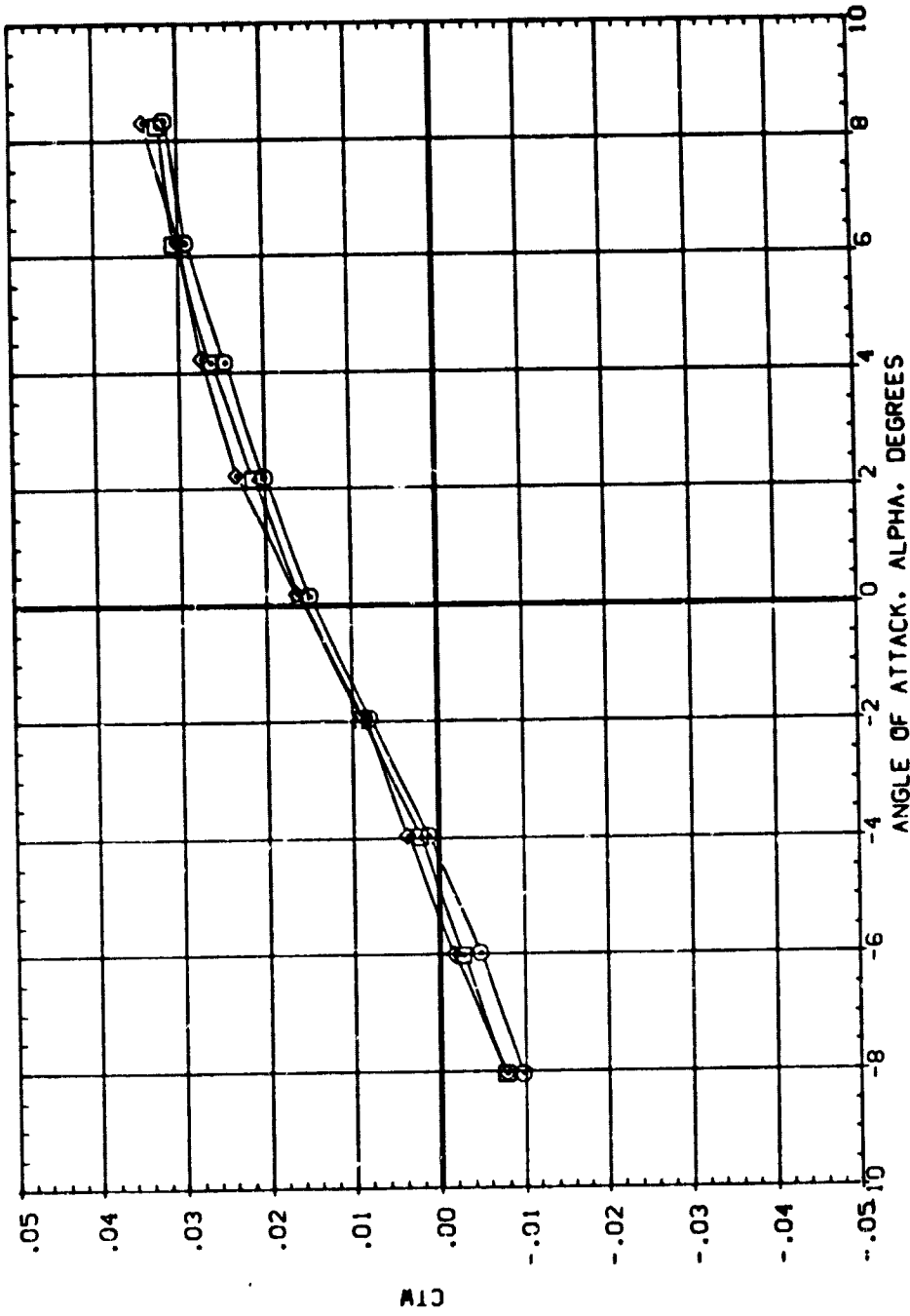
BREF 3.7470 IN.

XREF 2.7120 IN.

YREF .0000 IN.

ZREF .0000 IN.

SCALE .4000 PERCENT

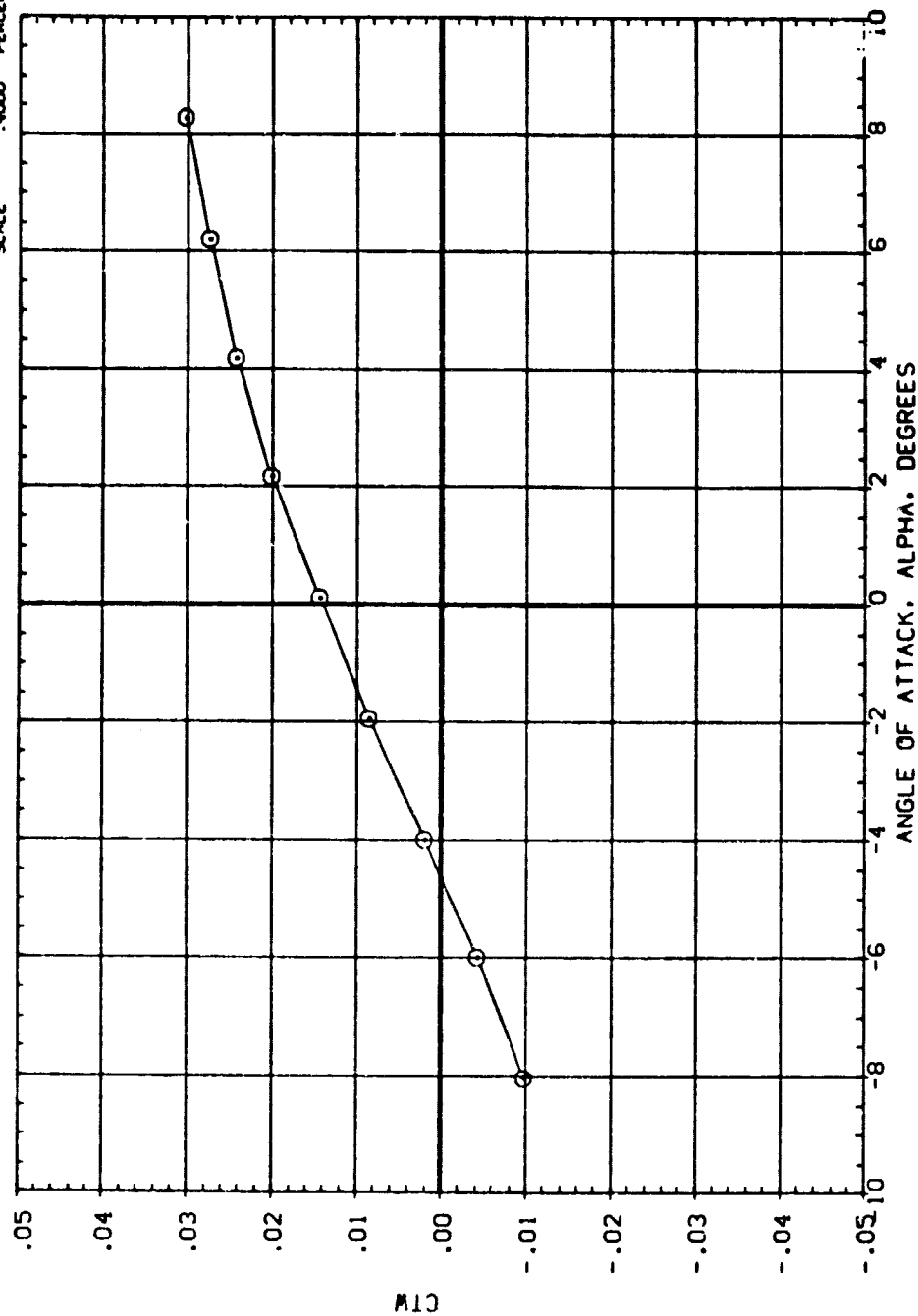


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) FA28. H57C TWT 656. CONFIG. 02V2E2PAPAT7353
 (FA2860) DATA NOT AVAILABLE
 (FA2863) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 SO. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

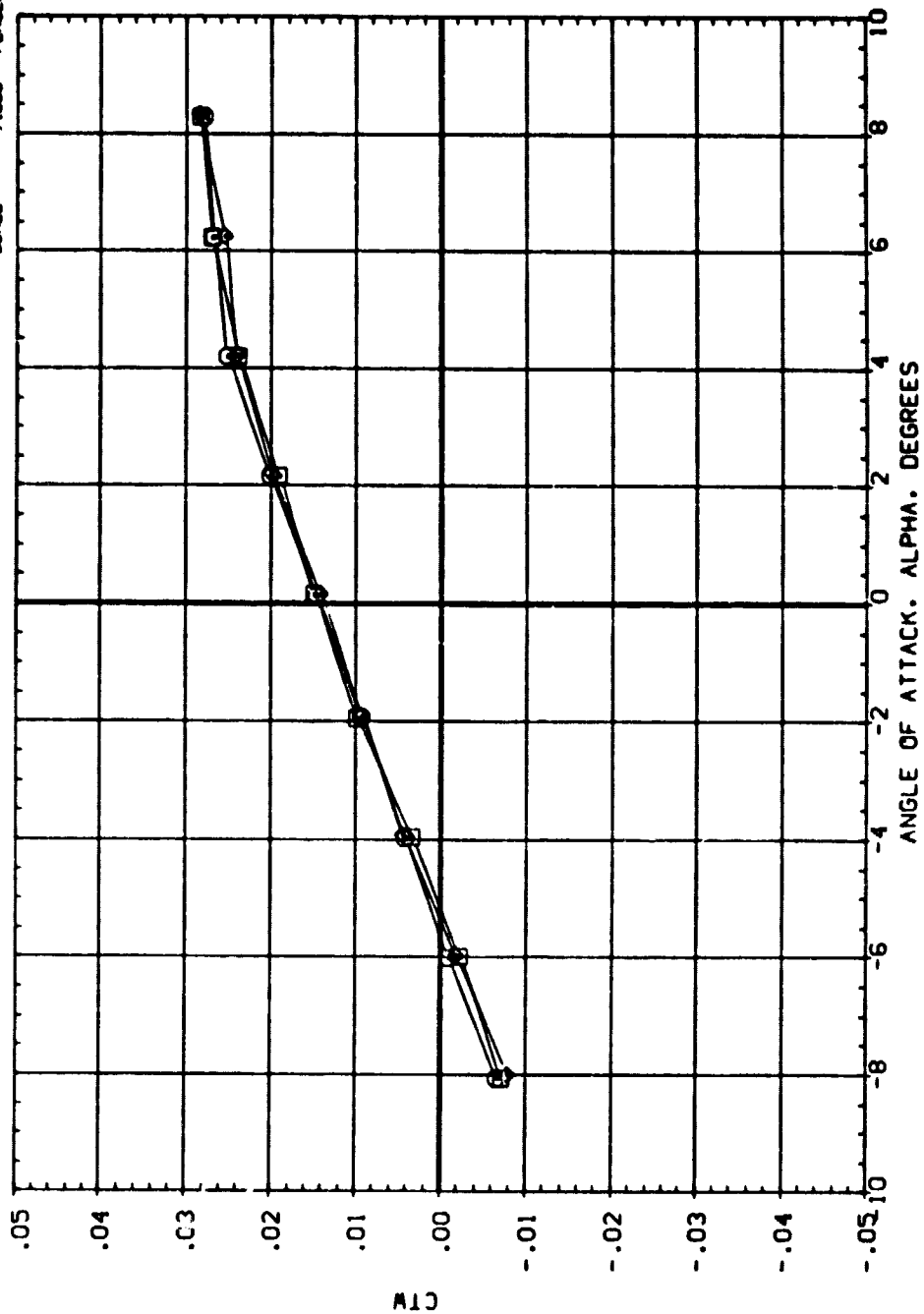


EFFECT OF BODY FLAP

(C)MACH = .95

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FA2859) FA28. MSFC TVT 656. CONF 1G. Q2VXZ20PAA11353
 (FA2860) FA28. MSFC TVT 656. CONF 1G. Q2VXZ20PAA11353
 (FA2863) FA28. MSFC TVT 656. CONF 1G. Q2VXZ20PAA11353

REFERENCE INFORMATION:
 SREF 6.1580 SQ. IN.
 LREF 9.1612 IN.
 BREF 3.7476 IN.
 WREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

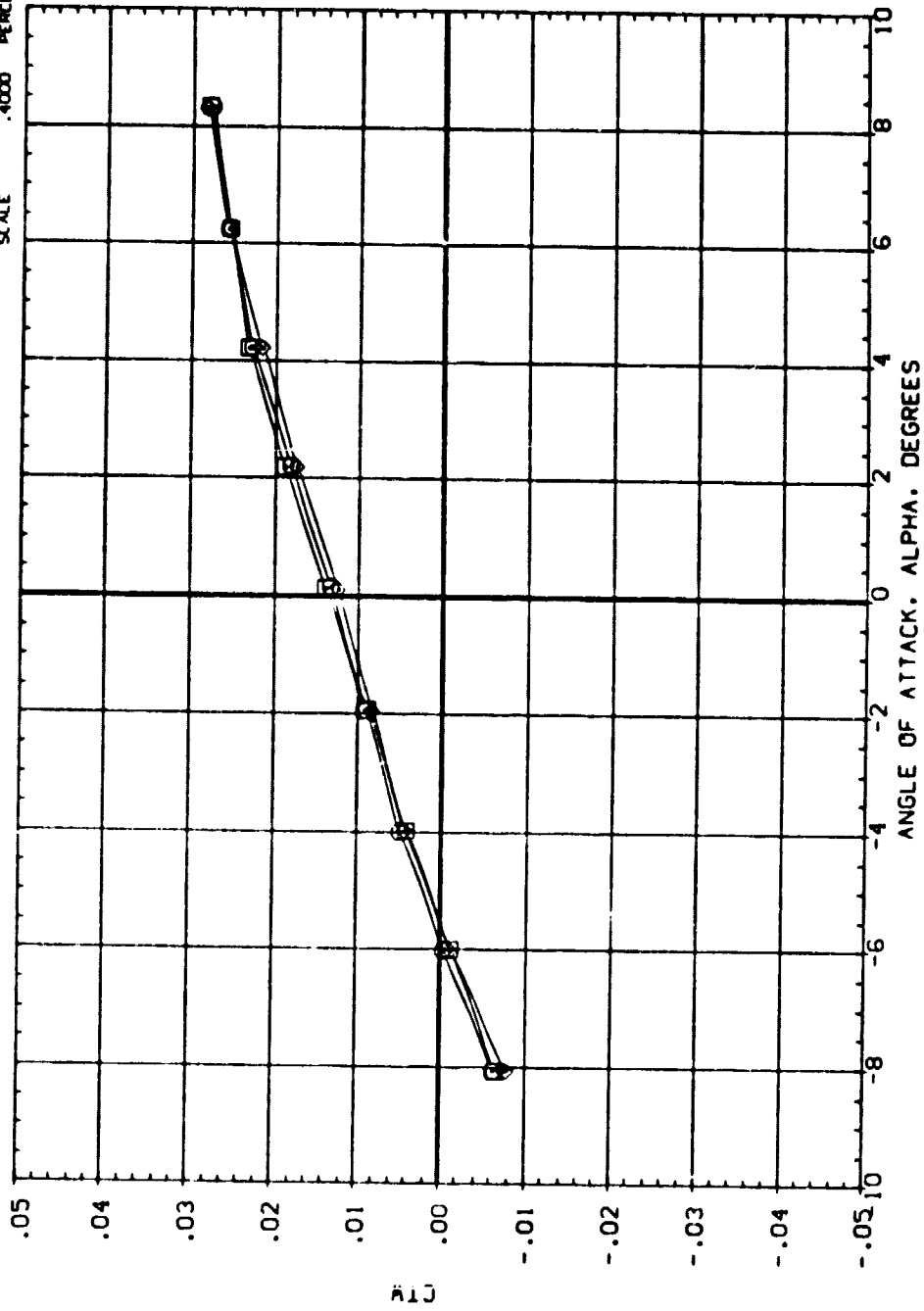


EFFECT OF BODY FLAP

(0)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) FA28: MFC TWT 656: CONF 16: 02VZE28A0A1T353
 (FA2860) FA28: MFC TWT 656: CONF 16: 02VZE28A0A1T353
 (FA2863) FA28: MFC TWT 656: CONF 16: 02VZE28A0A1T353

REFERENCE INFORMATION
 SREF 6.1380 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XPRP 2.7120 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .4000 PERCENT

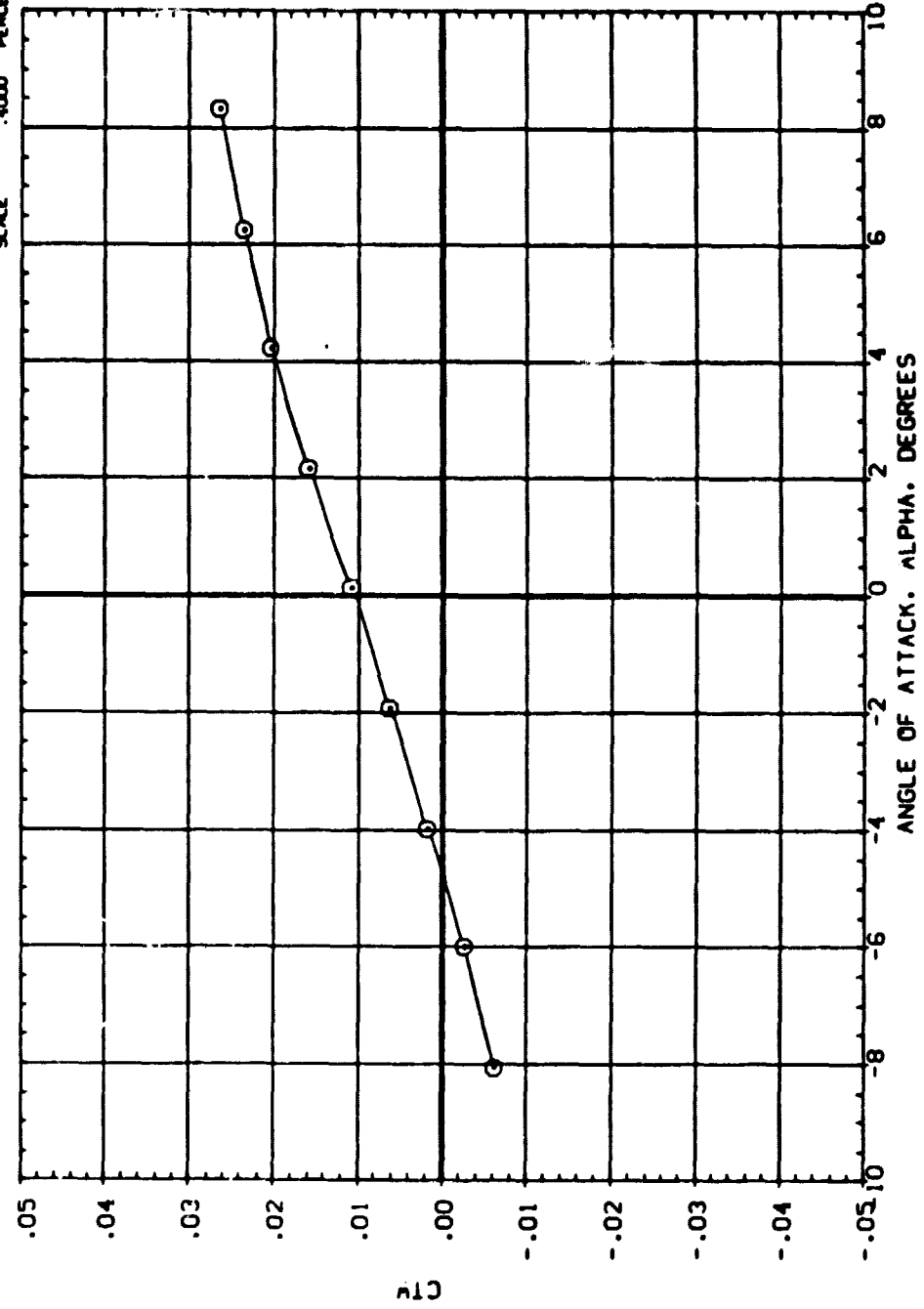


EFFECT OF BODY FLAP

(C)MACH = 1.10


DATA S-T SYMBOL CONFIGURATION DESCRIPTION
 (FA2058) FA20, MSFC, TWT 556, CONFIG. 0202E200PAATT353
 (FA2060) DATA NOT AVAILABLE
 (FA2063) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 5.1580 IN
 LREF 3.1612 IN
 MREF 3.7470 IN
 YPROP 2.7120 IN
 ZPROP .0000 IN
 SCALE .4000 PERCENT

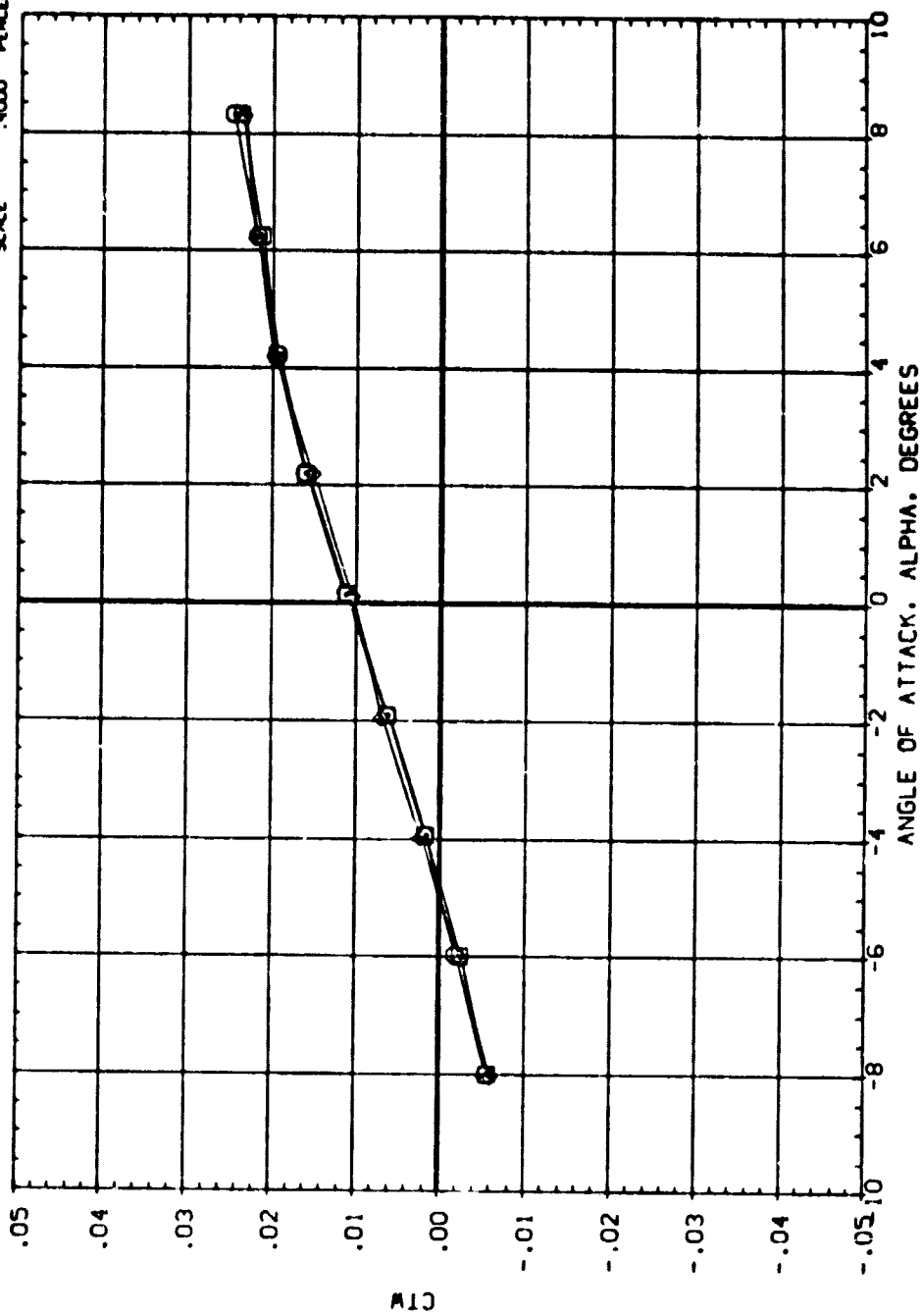


EFFECT OF BODY FLAP

(F)MACH = 1.15

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION
 (FA2058) FA20: MSFC TWT 656: CONF IG: 02N2E20-PAAT1353
 (FA2060) FA20: MSFC TWT 656: CONF IG: 02N2E20-PAAT1353
 (FA2063) FA20: MSFC TWT 656: CONF IG: 02N2E20-PAAT1353

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7170 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

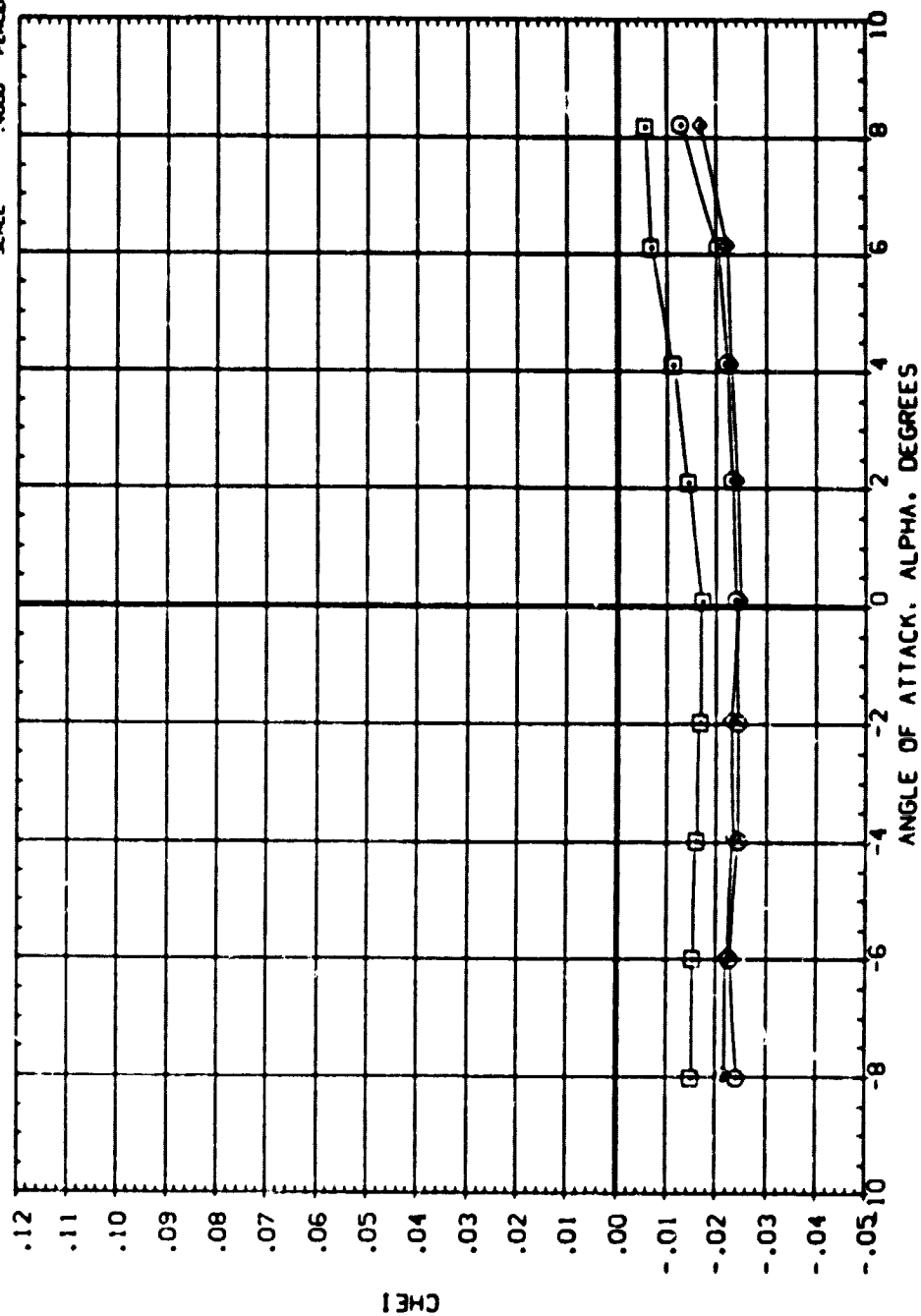


EFFECT OF BODY FLAP

(G)MACH = 1.25

FA20. M5C 1V1 656. CONF. 02VZE2M0AA11353
FA20. M5C 1V1 656. CONF. 02VZE2M0AA11353
FA20. M5C 1V1 656. CONF. 02VZE2M0AA11353

REFERENCE INFORMATION		
SHEET	NO.	IN.
LAST	5,1612	IN.
DATE	3,7470	IN.
TIME	2,7120	IN.
WAVE	.0000	IN.
TYPE	.0000	IN.
SCALE	.0000	PERCENT

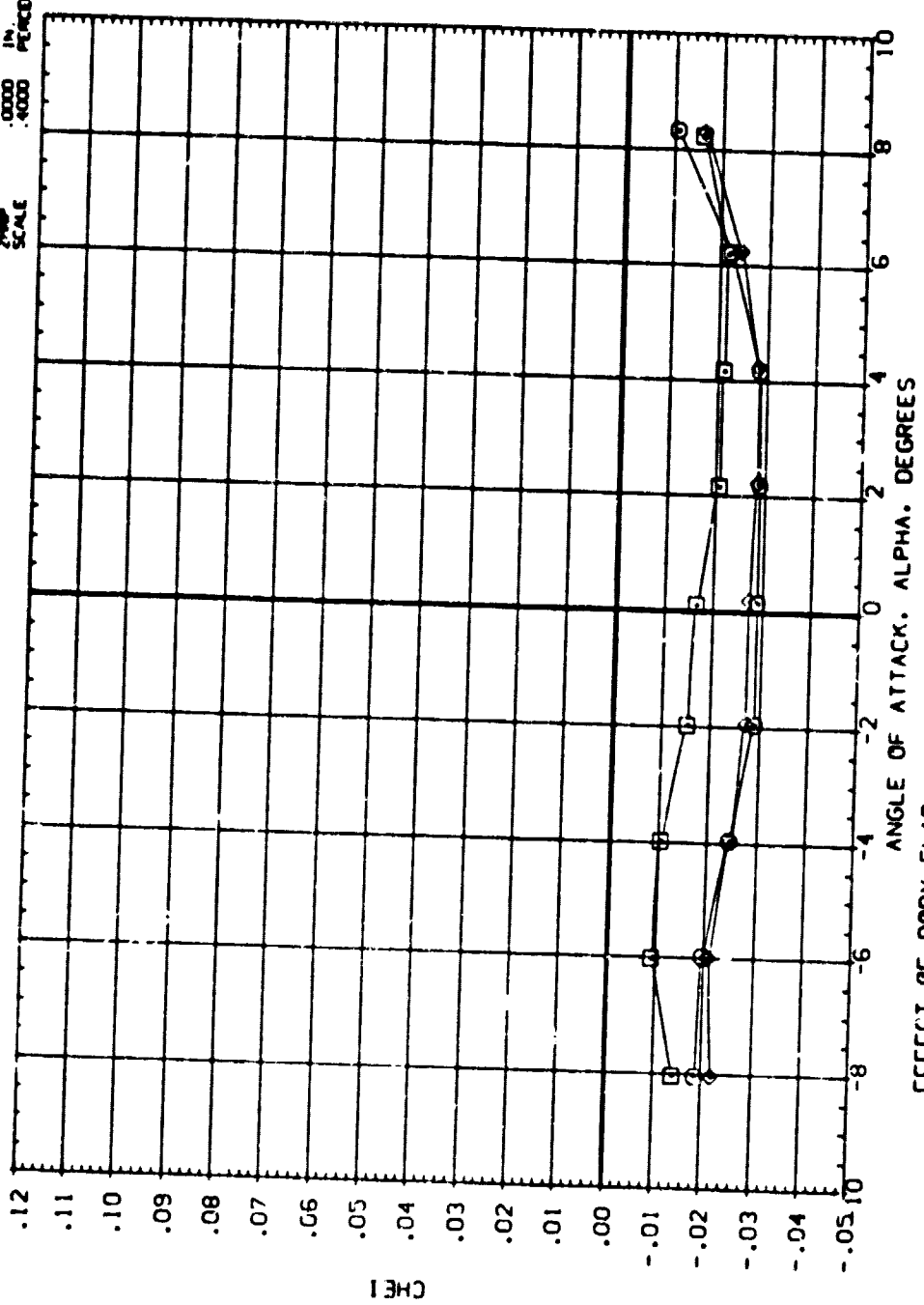


EFFECT OF BODY FLAP

$$(A)MACH = .60$$

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA28) (FA28) (FA28) (FA28) (FA28) (FA28) (FA28) (FA28)
 (FA28) (FA28) (FA28) (FA28) (FA28) (FA28) (FA28) (FA28)
 (FA28) (FA28) (FA28) (FA28) (FA28) (FA28) (FA28) (FA28)

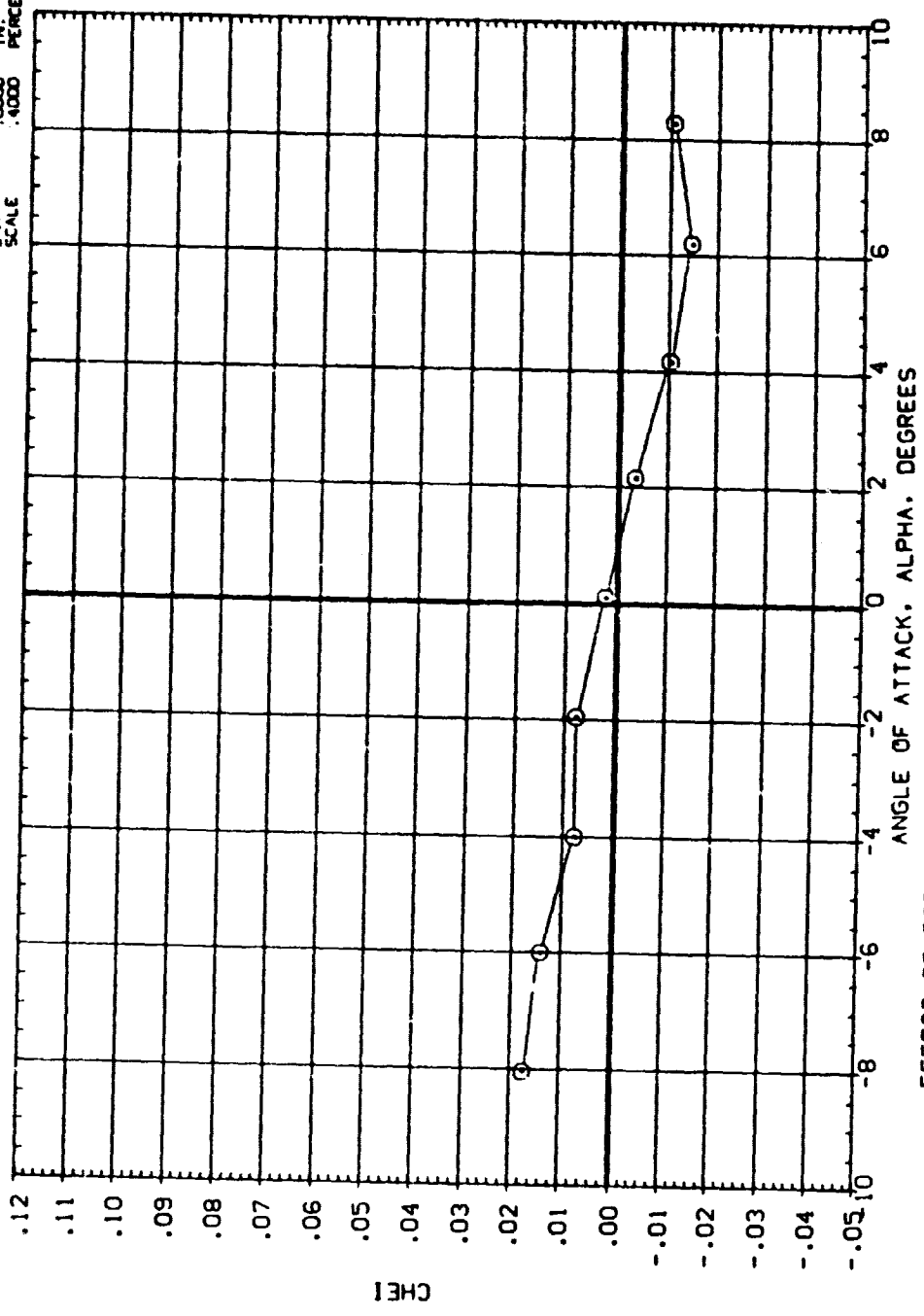
REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 14. IN
 BREF 3.7470 14. IN
 WREF 2.7120 14. IN
 YREF .0000 14. IN
 ZREF .0000 14. IN
 SCALE .4000 PERCENT



(B)MACH = .90

DATA SET SYMBOL: CONFIGURATION DESCRIPTION: FA28, MSFC, TVT 656, CONFIG. 03WZE20NPAAT7353
 (FA2858) DATA NOT AVAILABLE
 (FA2860) DATA NOT AVAILABLE
 (FA2863)

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



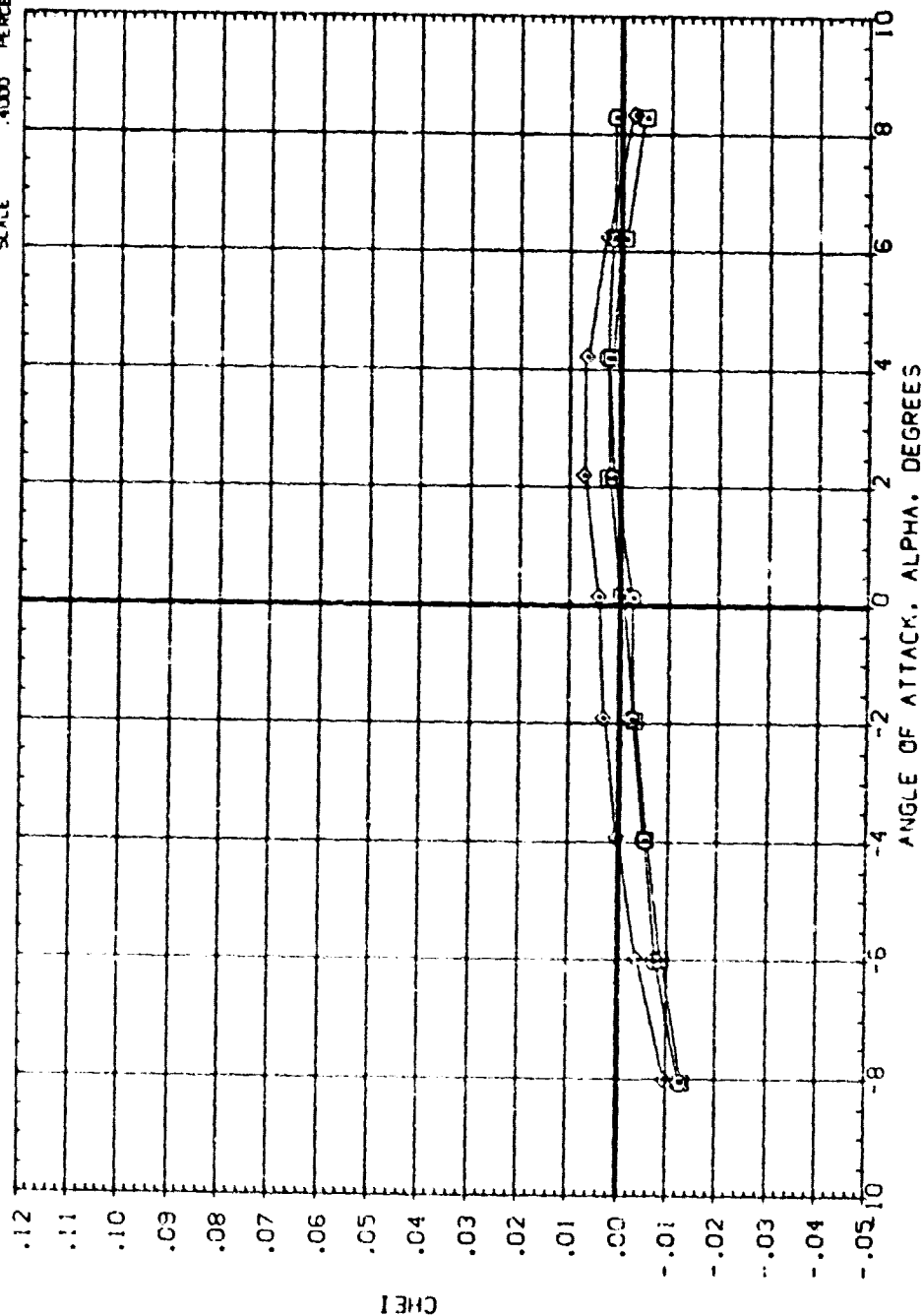
EFFECT OF BODY FLAP

(C)MACH = .95

C - 7

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) FA28. WSC 14. 556. COF 3. 37470-20-PA11133
 (FA2860) FA28. WSC 14. 556. COF 3. 37470-20-PA11133
 (FA2863) FA28. WSC 14. 556. COF 3. 37470-20-PA11133

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

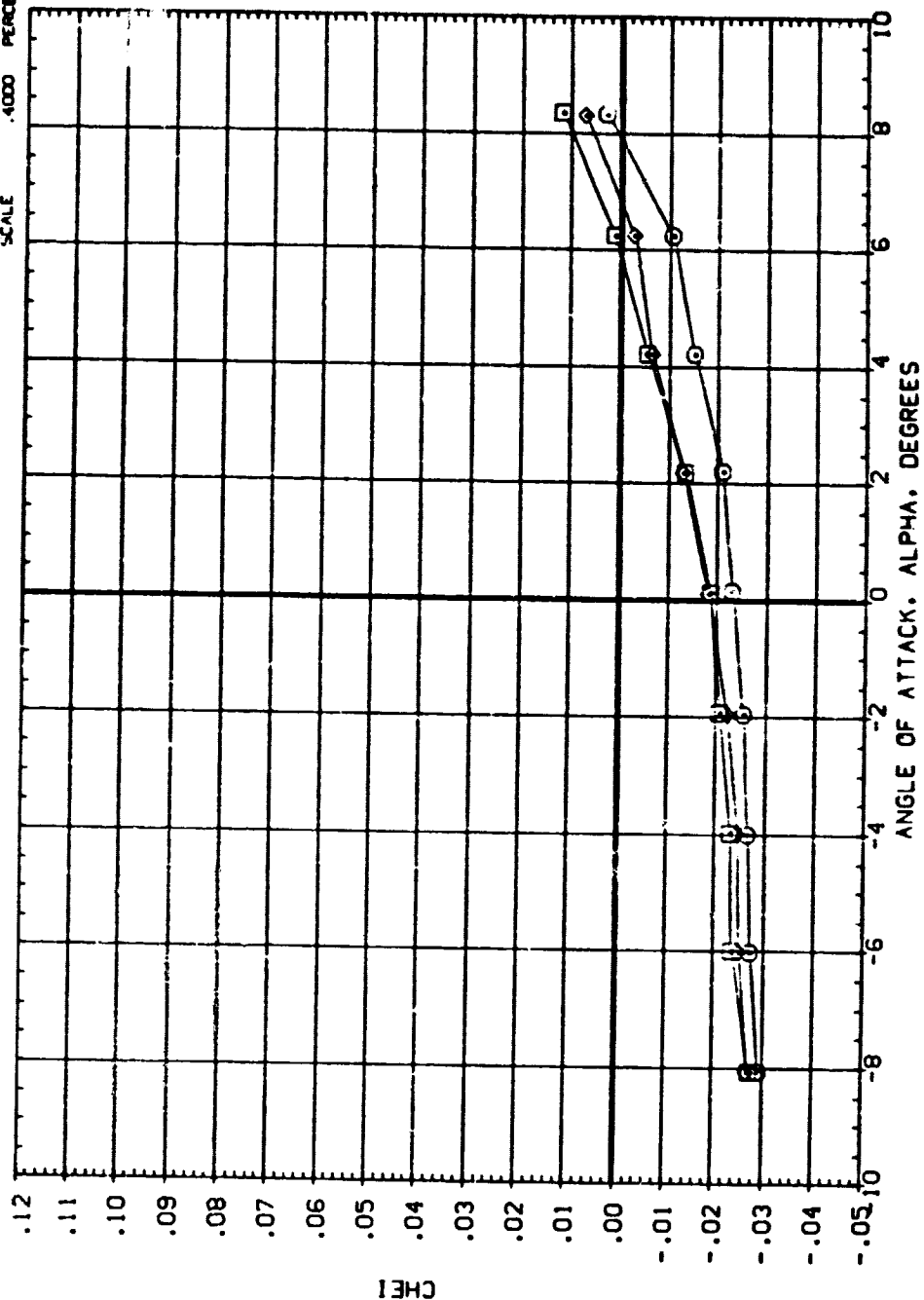


EFFECT OF BODY FLAP

(D)MACH = 1.05

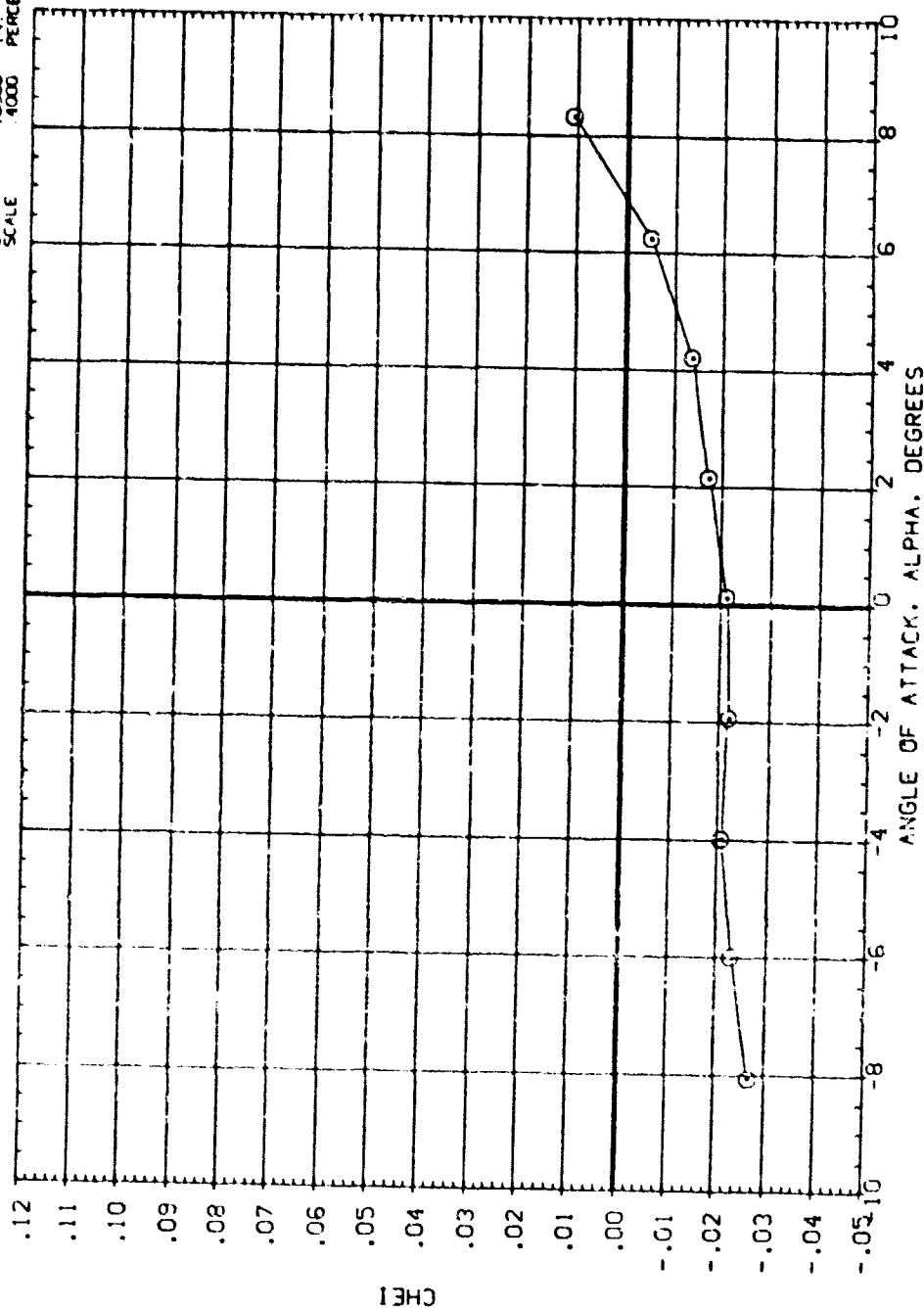
DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION:
 FA28, MSFC TVT 856, CONF 10, 02NUZE 200PAAT1353
 FA28, MSFC TVT 856, CONF 10, 02NUZE 200PAAT1353
 FA28, MSFC TVT 856, CONF 10, 02NUZE 200PAAT1353

REFERENCE INFORMATION:
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 ARAP 2.7120 IN.
 TARP .0000 IN.
 SCALE .4000 PERCENT



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2863) FA2863 TV 656 CONFIG. UNWEIGHTED
 (FA2863) DATA NOT AVAILABLE
 (FA2863) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 ARPP 2.7170 IN.
 MRPP .0000 IN.
 ZMRP .0000 IN.
 SCALE 4000 PERCENT



EFFECT OF BODY FLAP

(F)MACH = 1.15

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FA2858) FA28, MSFC TWT 856, CONF 10, 02VZE20-PAATT753

(FA2860) FA28, MSFC TWT 856, CONF 10, 02VZE20-PAATT753

(FA2863) FA28, MSFC TWT 856, CONF 10, 02VZE20-PAATT753

REFERENCE INFORMATION

SREF 6.1580 SQ. IN.

LREF 5.1612 IN.

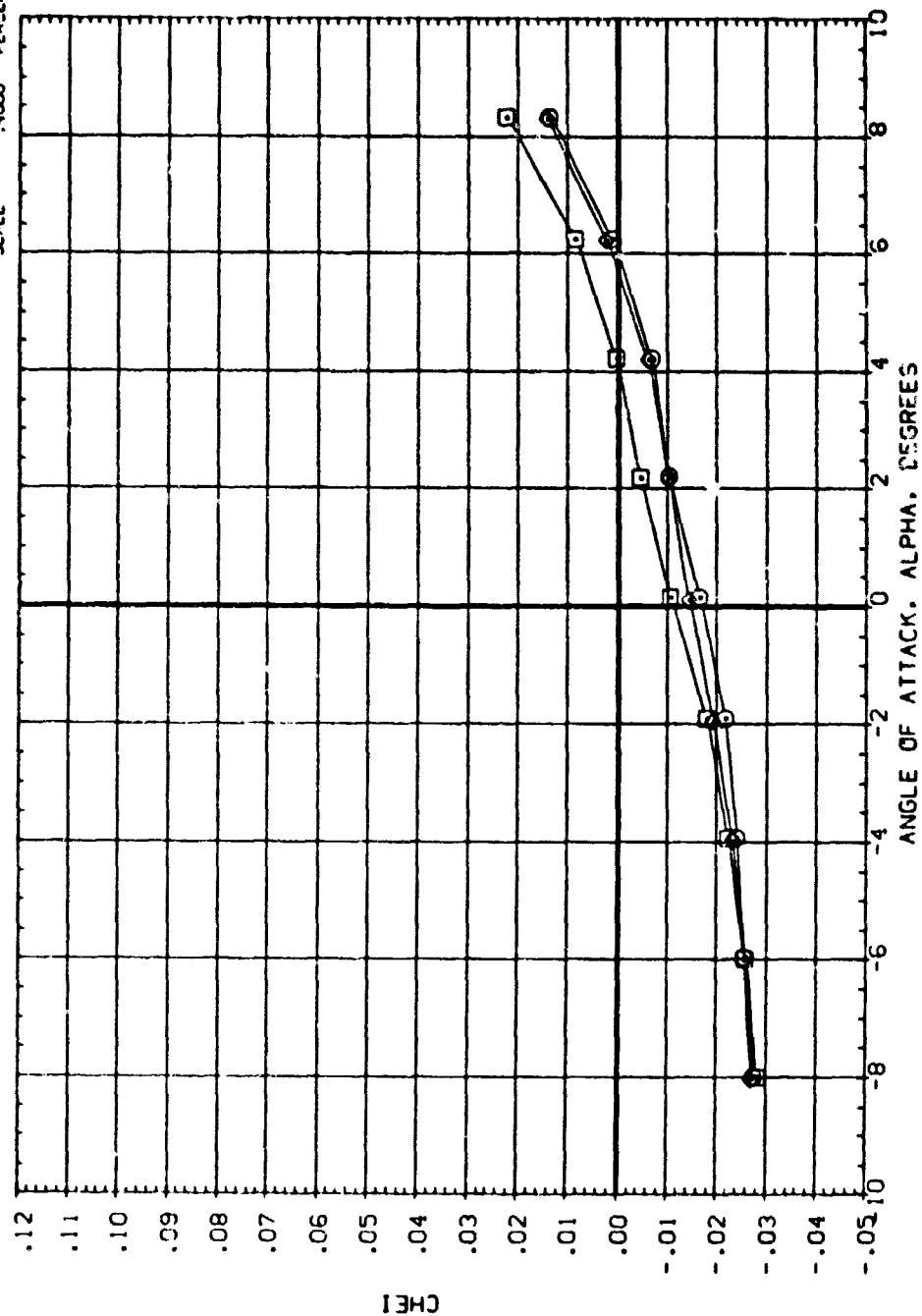
BREF 3.7470 IN.

XREF 2.7120 IN.

YREF .0000 IN.

ZREF .0000 IN.

SCALE .4000 PERCENT

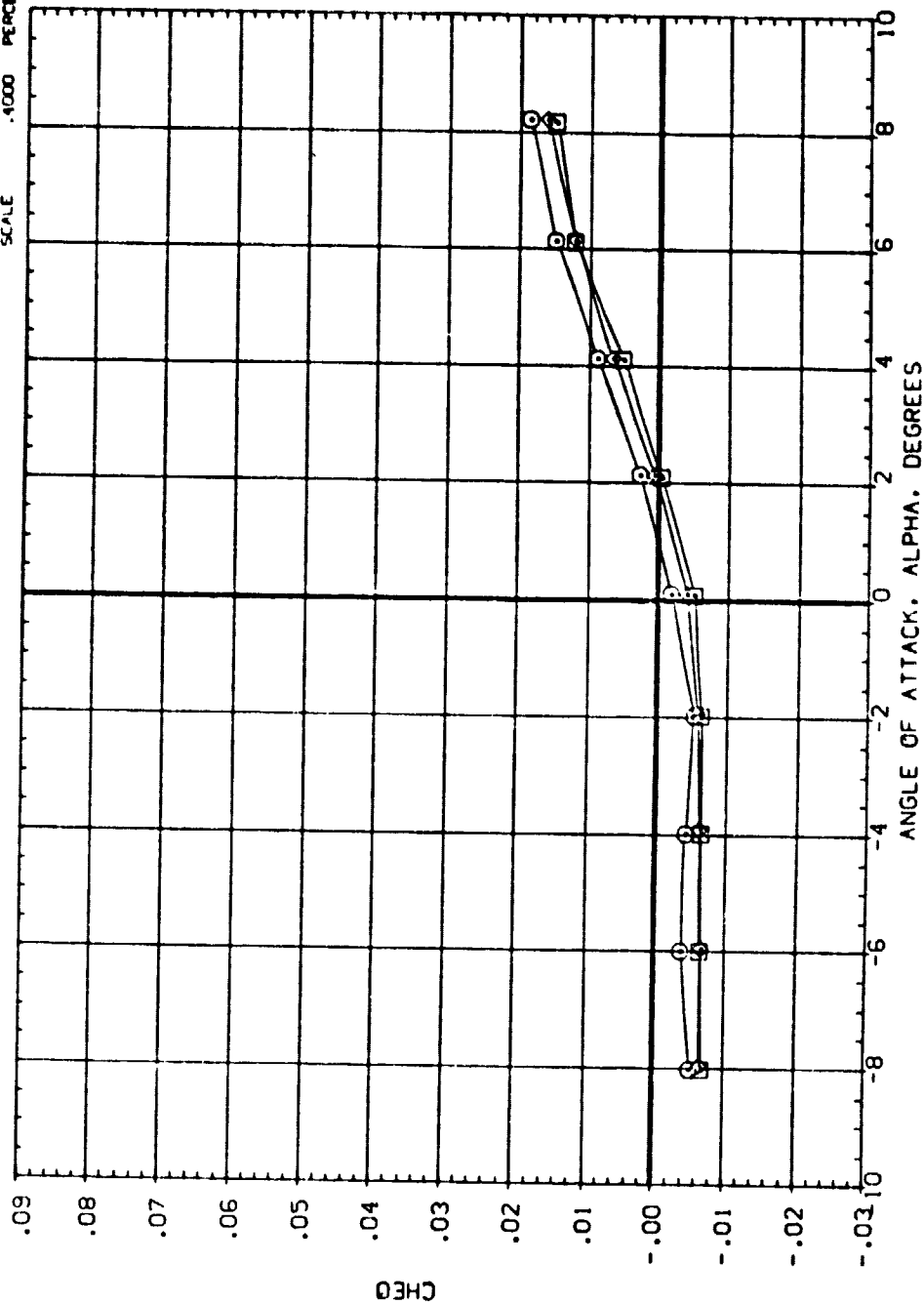


EFFECT OF BODY FLAP

(G)MACH = 1.25

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (FA2529) 02N2E20-PAATT353
 (FA2563) 02N2E20-PAATT353
 (FA2563) 02N2E20-PAATT353

REFERENCE INFORMATION
 SPREF 6.1980 SQ. IN.
 LPREF 5.1612 IN.
 BPREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



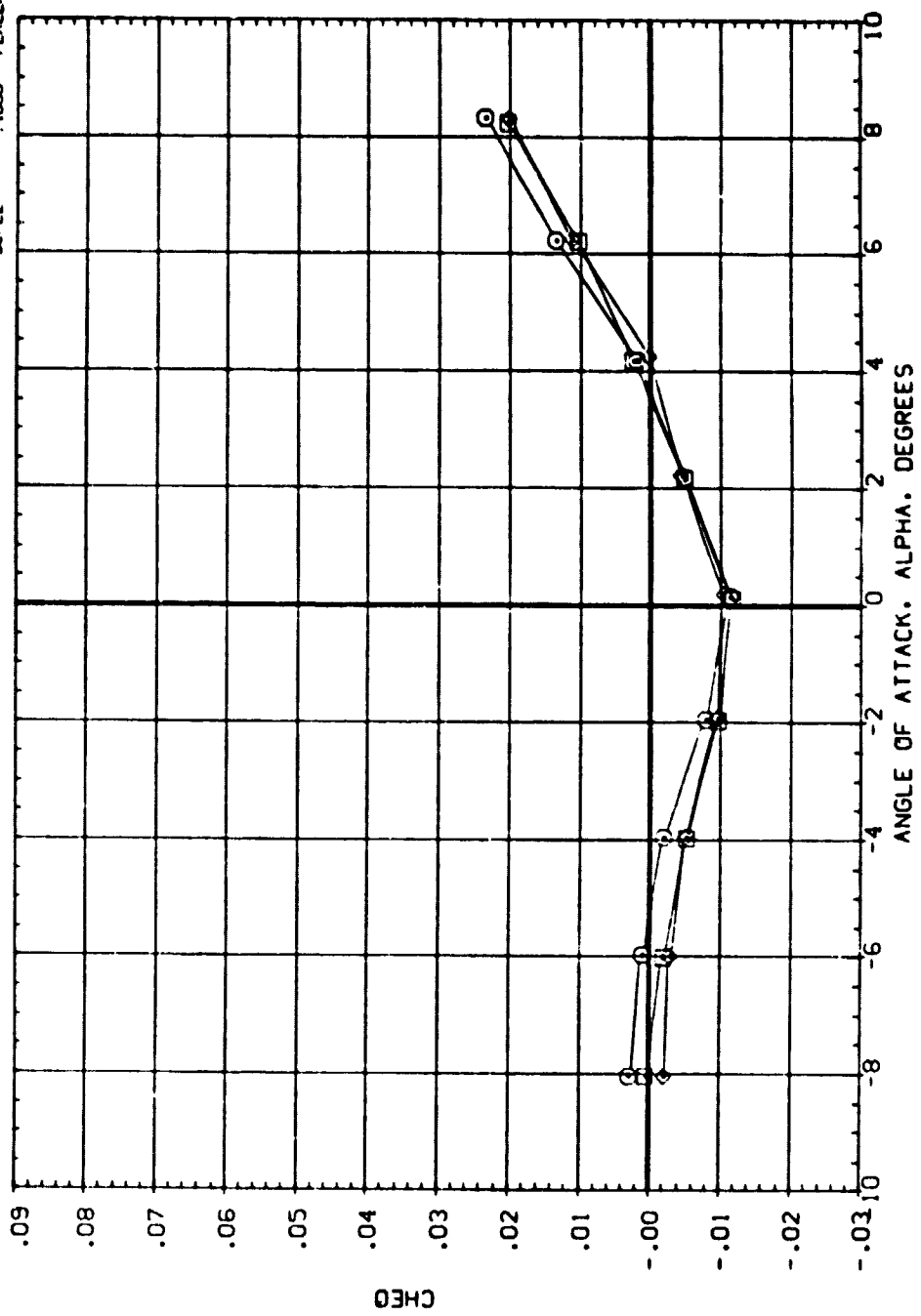
EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL: (FA2019)
 (FA2060)
 (FA2063)

CONFIGURATION DESCRIPTION:
 FA20: MSFC TV: 656: CONF: 10: 02N2E20-PA11353
 FA20: MSFC TV: 656: CONF: 10: 02N2E20-PA11353
 FA20: MSFC TV: 656: CONF: 10: 02N2E20-PA11353

REFERENCE INFORMATION:
 SIZE: 6.1800 IN.
 LREF: 2.1612 IN.
 BREF: 2.7470 IN.
 YREF: 2.7470 IN.
 ZREF: .0000 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .4000 PERCENT

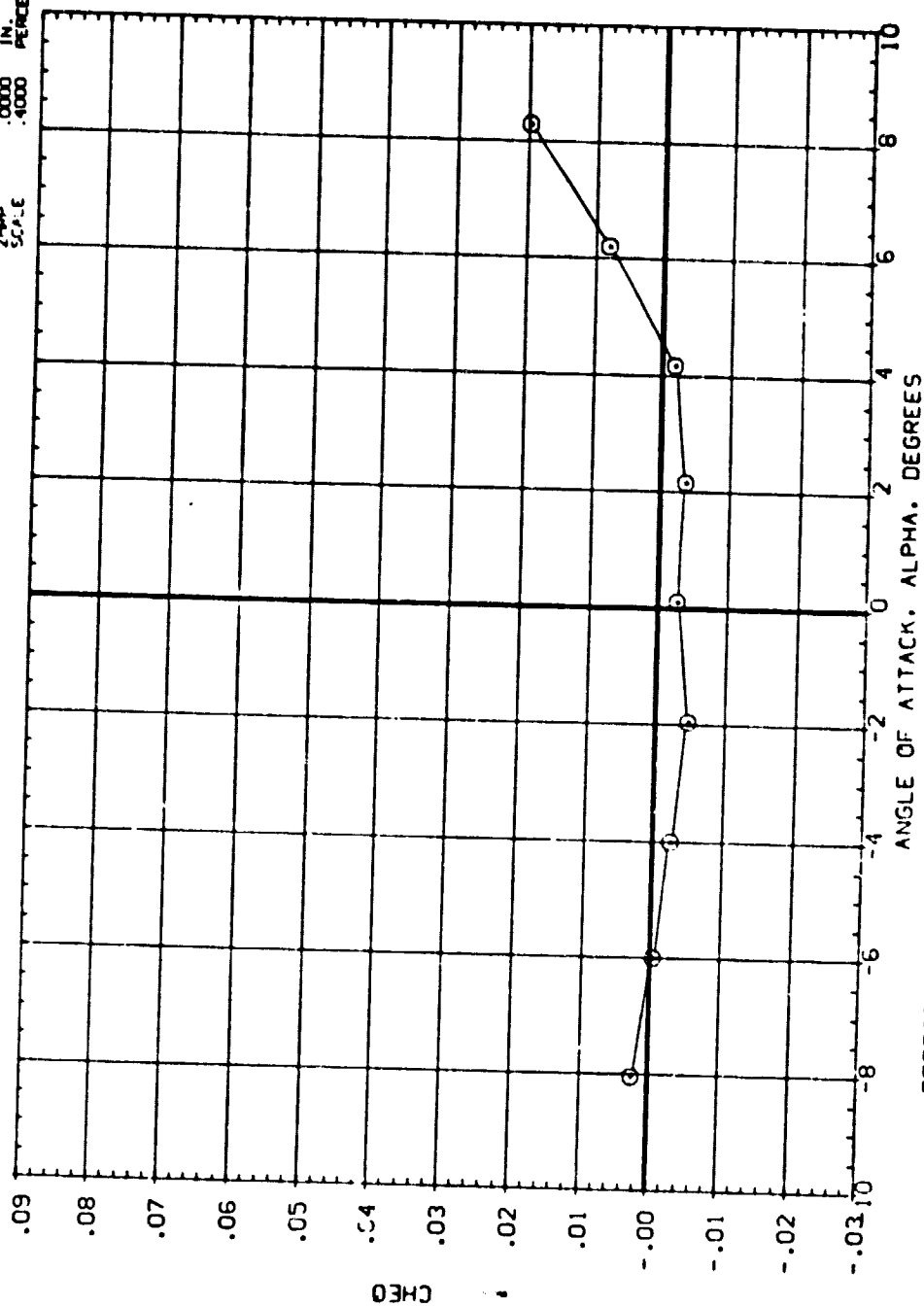


EFFECT OF BODY FLAP

(B)MACH = .90

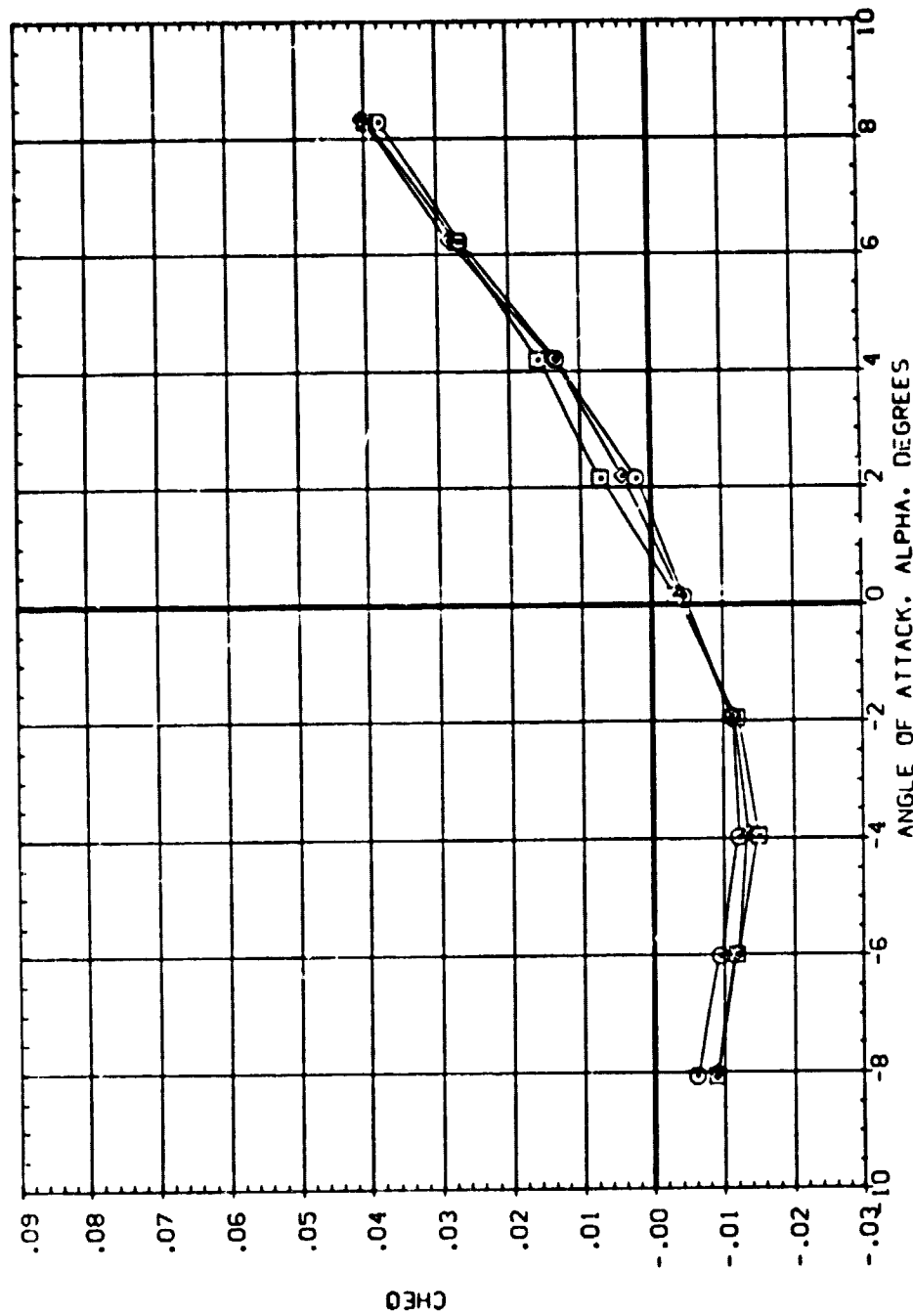
DATA SET SYMBOL: FA28, MSFC INT 556, CONF IG. 02VZ20PAATT353
 (FA2858) DATA NOT AVAILABLE
 (FA2850) DATA NOT AVAILABLE
 (FA2853)

REFERENCE INFORMATION
 SPEC 6.1980 50. IN
 REF 3.1612 IN.
 SPEC 3.7470 IN.
 REF 2.7120 IN.
 SPEC .0000 IN.
 REF .0000 IN.
 SCALE .0000 PERCENT



(C)MACH = .95

REFERENCE INFORMATION	
SREF	5.1980 IN.
LREF	5.1612 IN.
BREF	3.7470 IN.
INRP	2.7120 IN.
VGRP	.0000 IN.
THRP	.0000 IN.
SCALE	.4000 PERCENT



EFFECT OF BODY FLAP

(D)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FA2063) FA20. MSFC TWT 556. CONF 10. 02NZE 206PAAT1353

(FA2060) FA20. MSFC TWT 556. CONF 10. 02NZE 206PAAT1353

(FA2063) FA20. MSFC TWT 556. CONF 10. 02NZE 206PAAT1353

REFERENCE INFORMATION

SREF 6.1961 50. IN

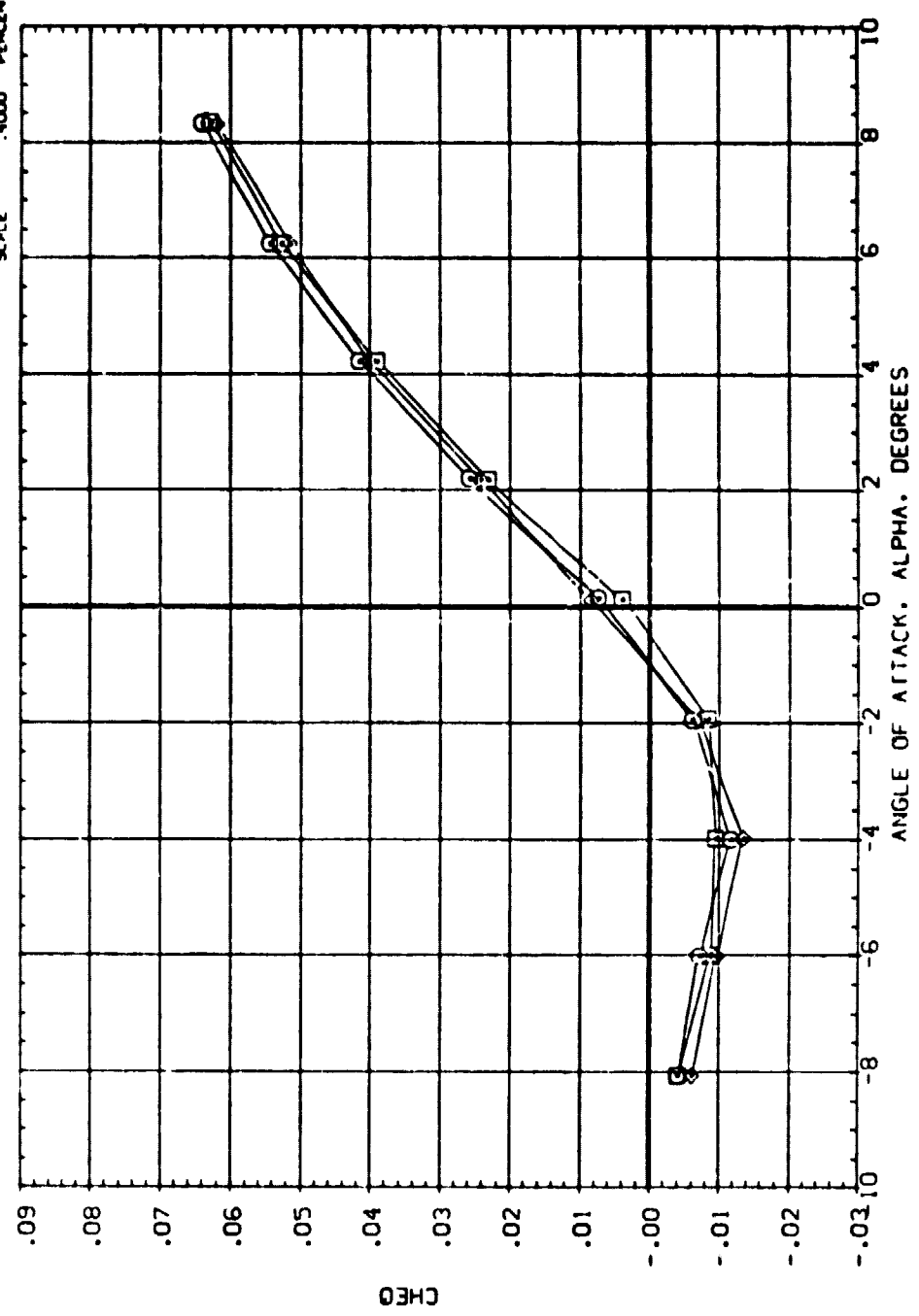
LREF 5.1612 40. IN

BREF 3.7470 30. IN

YREF 2.7120 20. IN

ZREF .0000 10. IN

SCALE .4000 PERCENT

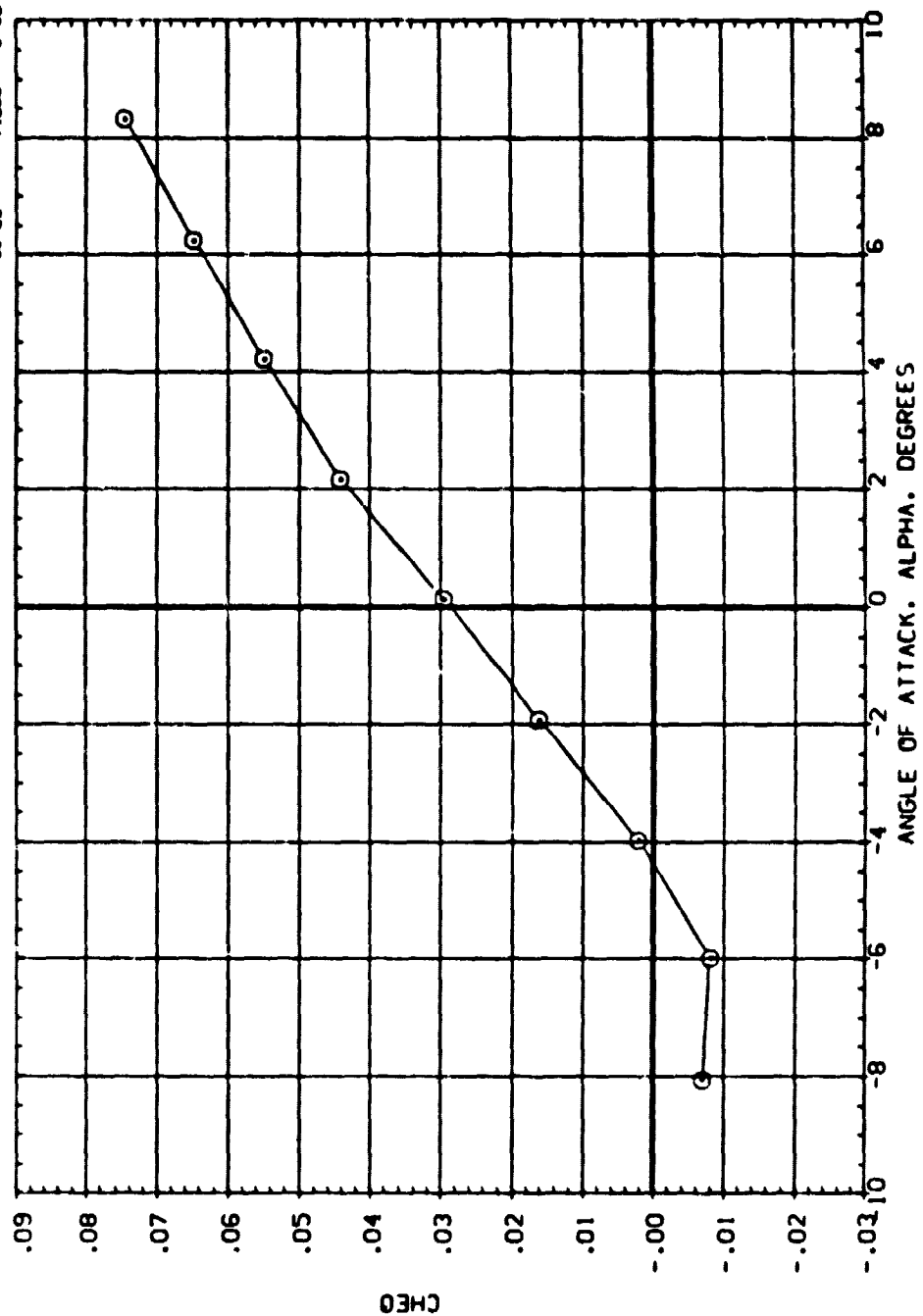


EFFECT OF BODY FLAP

(E)MACH = 1.10

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA29, MSC TWT 656, CONFIG. 02VZ23PMPAT7353
 (FA2958) DATA NOT AVAILABLE
 (FA2959) DATA NOT AVAILABLE
 (FA2963) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 YREF 2.7120 IN
 ZREF .0000 IN
 SCALE .0000 PERCENT

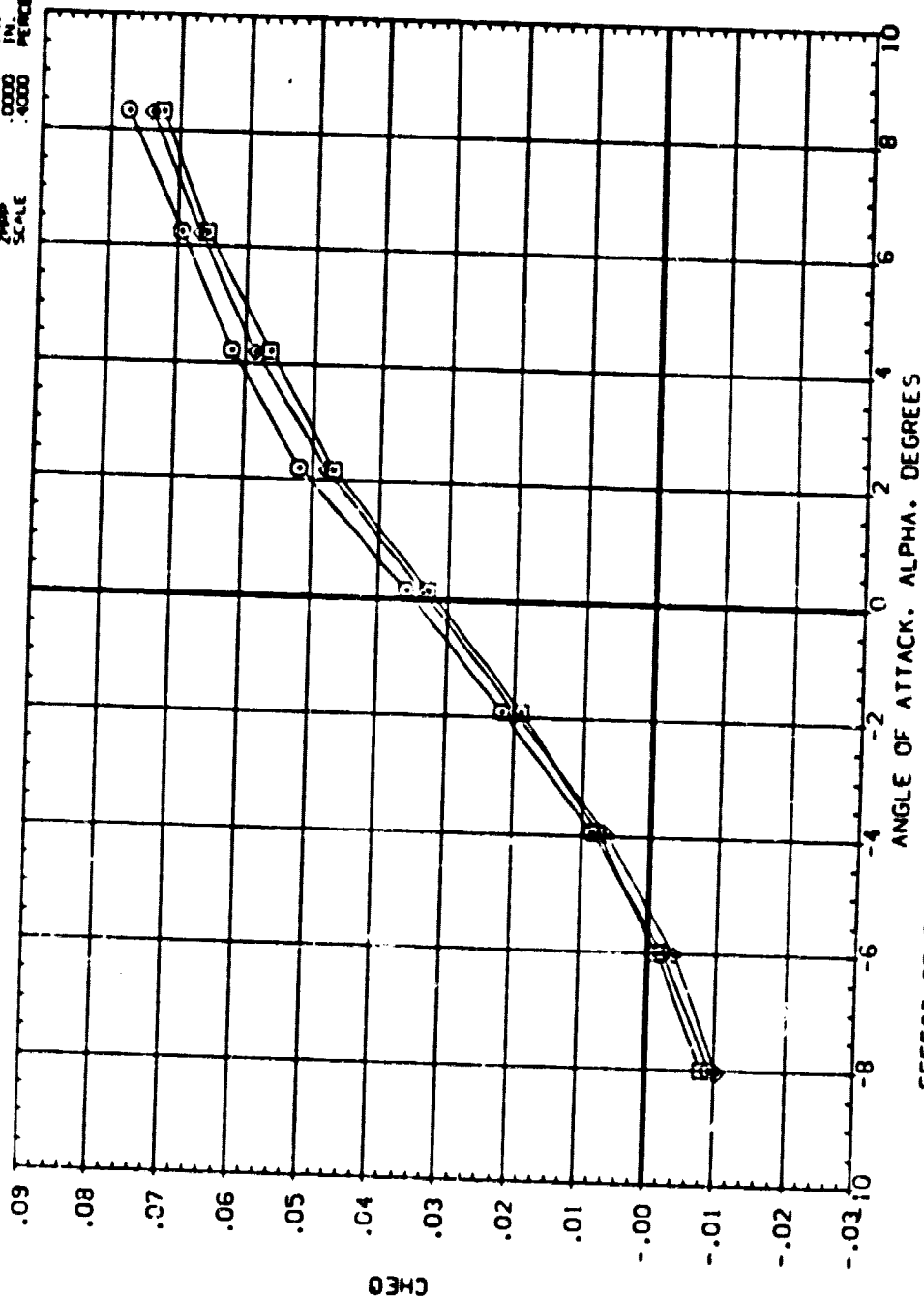


EFFECT OF BODY FLAP

(F)MACH = 1.15

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) FA28: MFC INT 655: CONF IG. OVAE 28PAAT1353
 (FA2859) FA28: MFC INT 656: CONF IG. OVAE 28PAAT1353
 (FA2863) FA28: MFC INT 658: CONF IG. OVAE 28PAAT1353

REFERENCE INFORMATION
 SHEET 6.1580 SQ. IN.
 LINE 5.1612 IN.
 BRP 3.7479 IN.
 AREA 2.7170 IN.
 MASS .0000 IN.
 MOMENT .0000 IN.
 SCALE .0000 PERIOD

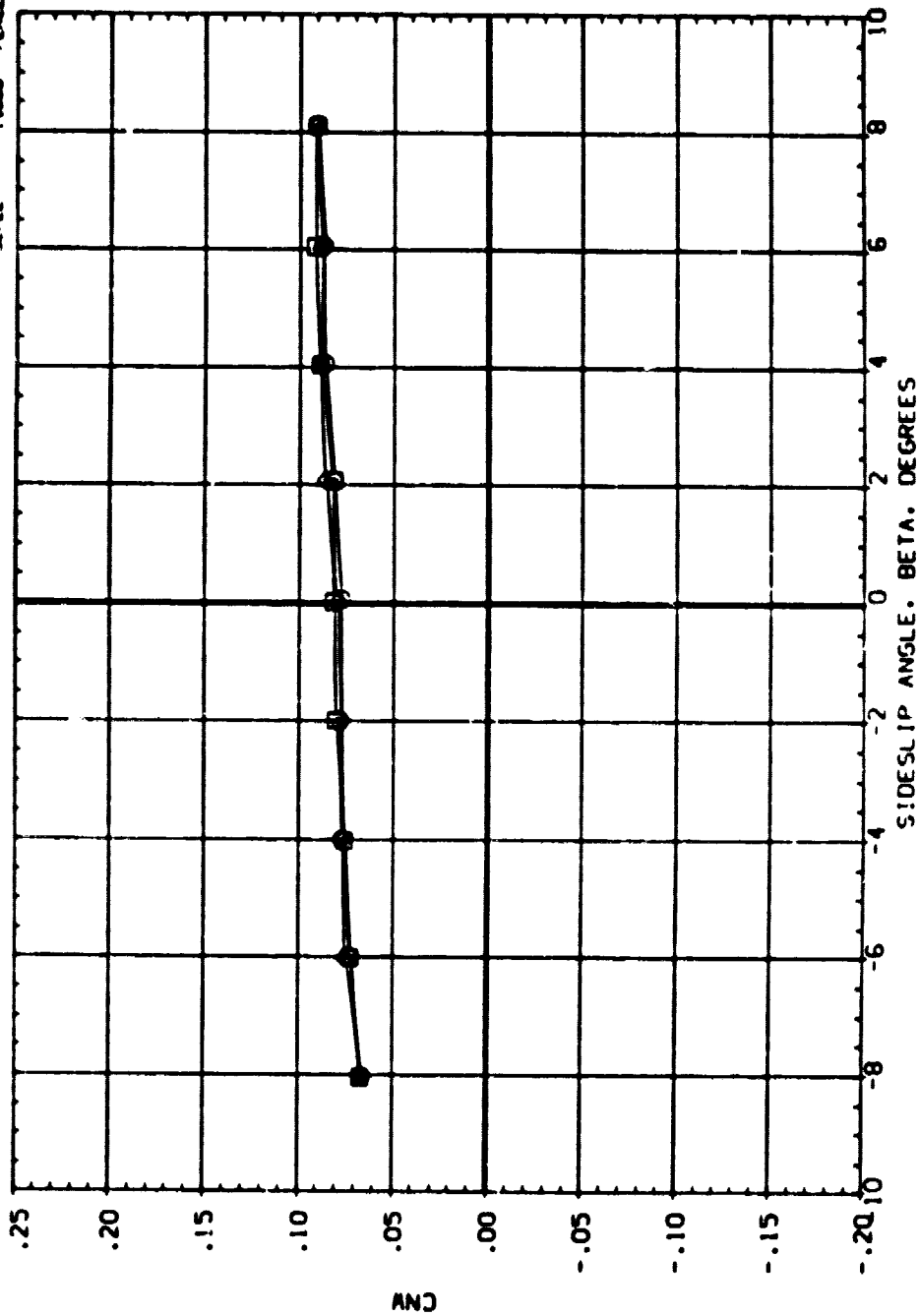


DATA SET SYMBOL: 0
 (PARAM1)
 (PARAM2)
 (PARAM3)

CONFIGURATION DESCRIPTION:
 CASE: MSC TWT 656. CONF: 10.
 CASE: MSC TWT 656. CONF: 10.
 CASE: MSC TWT 656. CONF: 10.




CONVERSION FACTORS:
 CASE: MSC TWT 656. CONF: 10.
 CASE: MSC TWT 656. CONF: 10.
 CASE: MSC TWT 656. CONF: 10.

REFERENCE INFORMATION:
 SHEET: 6.1980 IN.
 LINE: 5.1612 IN.
 BOLT: 3.7470 IN.
 WOOD: 2.7120 IN.
 WOOD: .0000 IN.
 WOOD: .0000 IN.
 SCALE: .0000 PERCENT

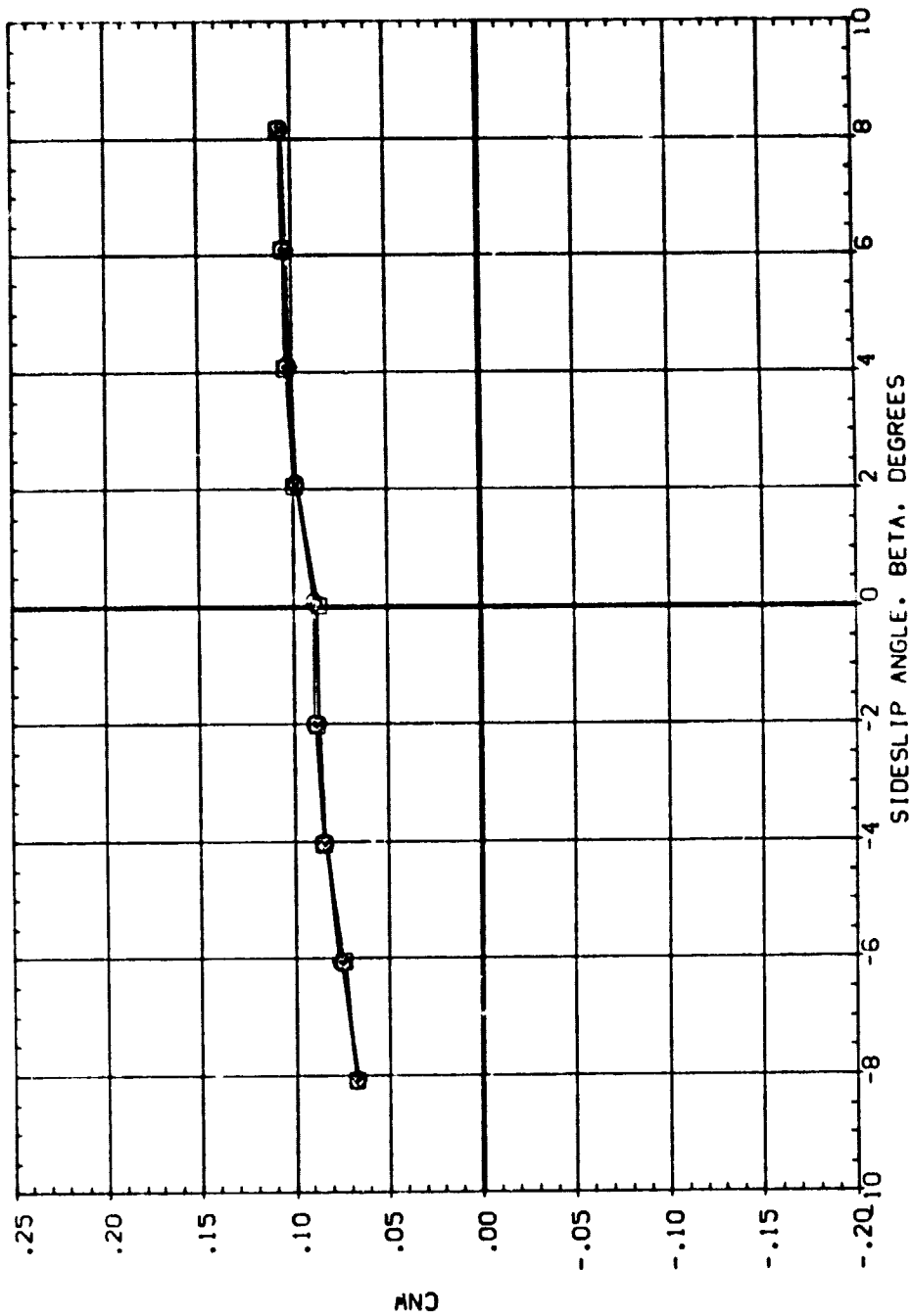


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2859)  FA28. WSC TV: 856. CONF IG. Q2VZE: PAPAATT353
 (FA2861)  FA28. WSC TV: 856. CONF IG. Q2VZE: PAPAATT353
 (FA2862)  FA28. WSC TV: 856. CONF IG. Q2VZE: PAPAATT353

REFERENCE INFORMATION
 SREF 6.1980 SO. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

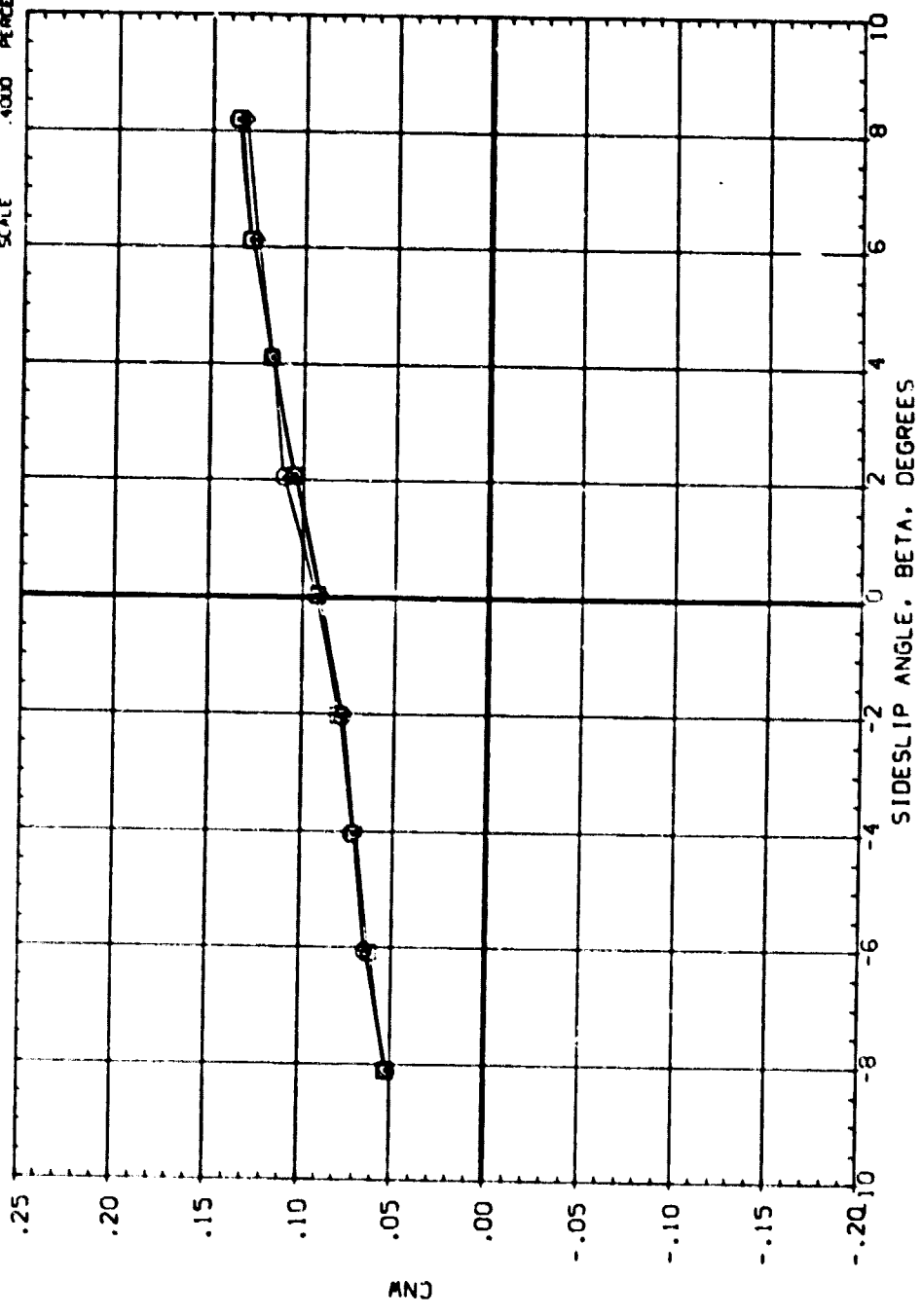


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FA2859) FA28: WFE 14° 556: COF 13: 0242E 00-PAAT1353
 (FA2861) FA28: WFE 14° 556: COF 13: 0242E 00-PAAT1353
 (FA2862) FA28: WFE 14° 556: COF 13: 0242E 00-PAAT1353

REFERENCE INFORMATION
 SREF 6.1900 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF BODY FLAP

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FA2651) FA26: W2C 14 656: COF IG. 0202E 20-PAAT-353

(FA2651) FA26: W2C 14 656: COF IG. 0202E 20-PAAT-353

(FA2662) FA26: W2C 14 656: COF IG. 0202E 20-PAAT-353

REFERENCE INFORMATION

SREF 6.1980 SQ. IN.

LREF 5.1612 IN.

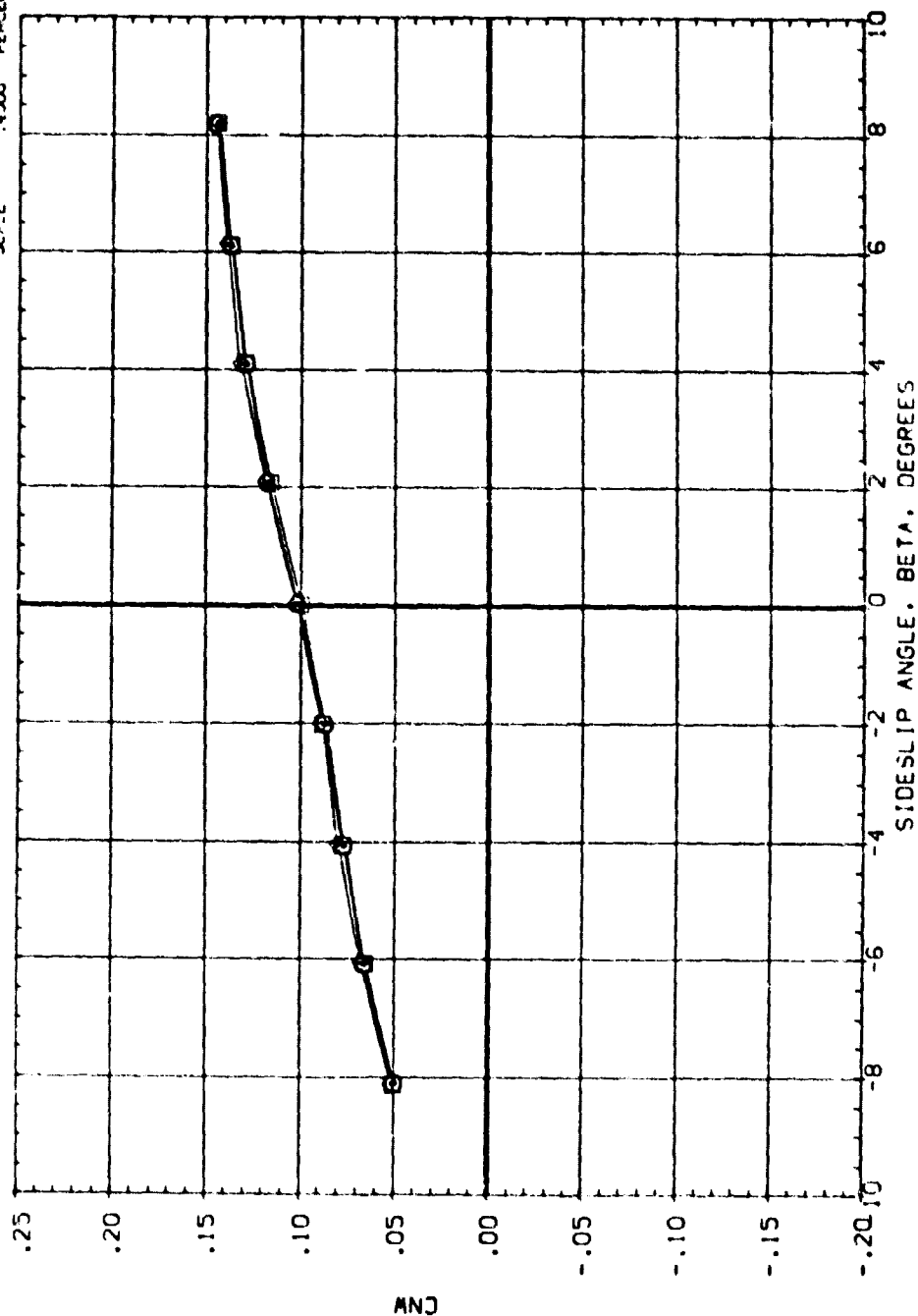
BREF 3.7470 IN.

XREF 2.7120 IN.

YREF .0000 IN.

ZREF .0000 IN.

SCALE .4000 PERCENT



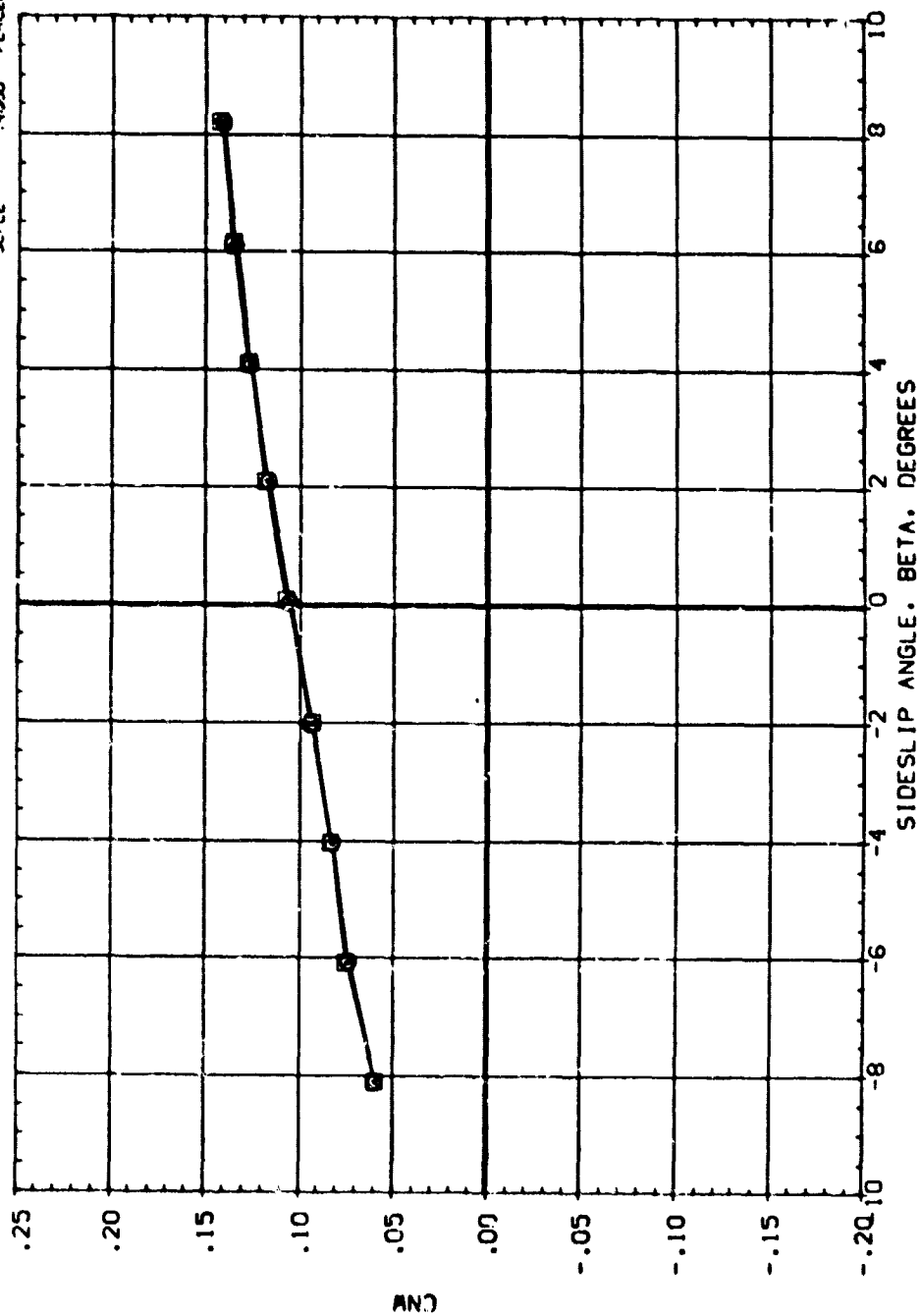
EFFECT OF BODY FLAP

(D)MACH = 1.10

DATA SET SYMBOL: (FA2053)
 (FA2051)
 (FA2052)
 (FA2053)
 (FA2054)
 (FA2055)
 (FA2056)
 (FA2057)
 (FA2058)
 (FA2059)
 (FA2060)
 (FA2061)
 (FA2062)

CONFIGURATION DESCRIPTION
 FA20: MSEC INT 556: COB 10: OVAL ZONAPAT1353
 FA20: MSEC INT 556: COB 10: OVAL ZONAPAT1353
 FA20: MSEC INT 556: COB 10: OVAL ZONAPAT1353

REFERENCE INFORMATION
 SREF: 6.1580 IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 XREF: 2.7120 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT

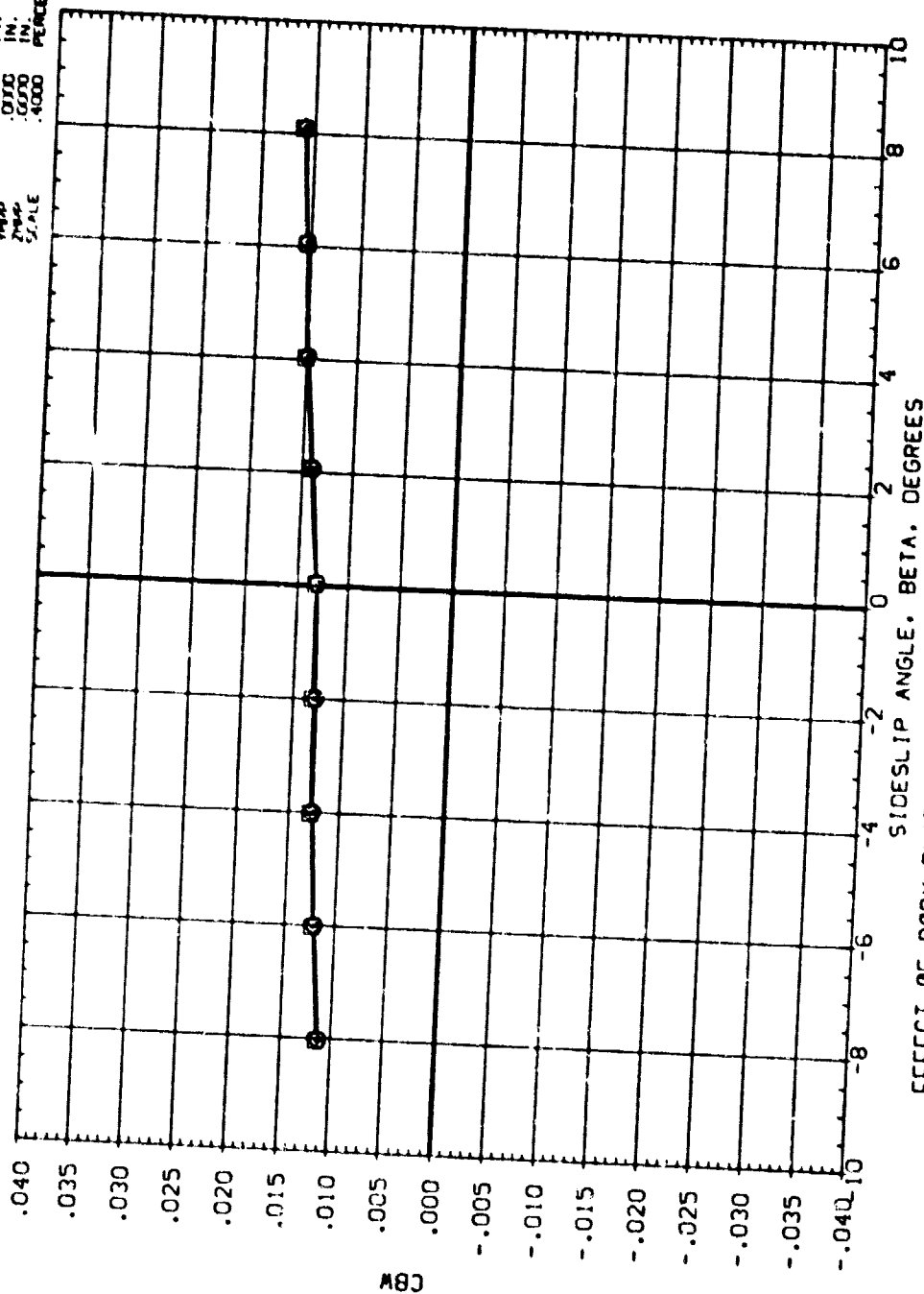


EFFECT OF BODY FLAP

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2859) FA28. MSFC TVT 856. COF IG. 02NZE 200PAA11353
 (FA2861) FA28. MSFC TVT 856. COF IG. 02NZE 200PAA11353
 (FA2862) FA28. MSFC TVT 856. COF IG. 02NZE 200PAA11353

REFERENCE INFORMATION
 SURF 6.1980 SQ. IN.
 LEAF 5.1612 IN.
 BATT 3.7470 IN.
 WING 2.7120 IN.
 VAMP .0330 IN.
 ZAMP .0030 IN.
 SCALE .4000 PERCENT



EFFECT OF BODY FLAP

(A) MACH = .60

DATA SET SYMBOL. CONFIGURATION DESCRIPTION

(FA2859) FA28. MSC TWT 656. CONF IG. QNZE20PAA1153

(FA2861) FA28. MSC TWT 656. CONF IG. QNZE20PAA1153

(FA2862) FA28. MSC TWT 656. CONF IG. QNZE20PAA1153

REFERENCE INFORMATION

SREF 6.1980 50. IN

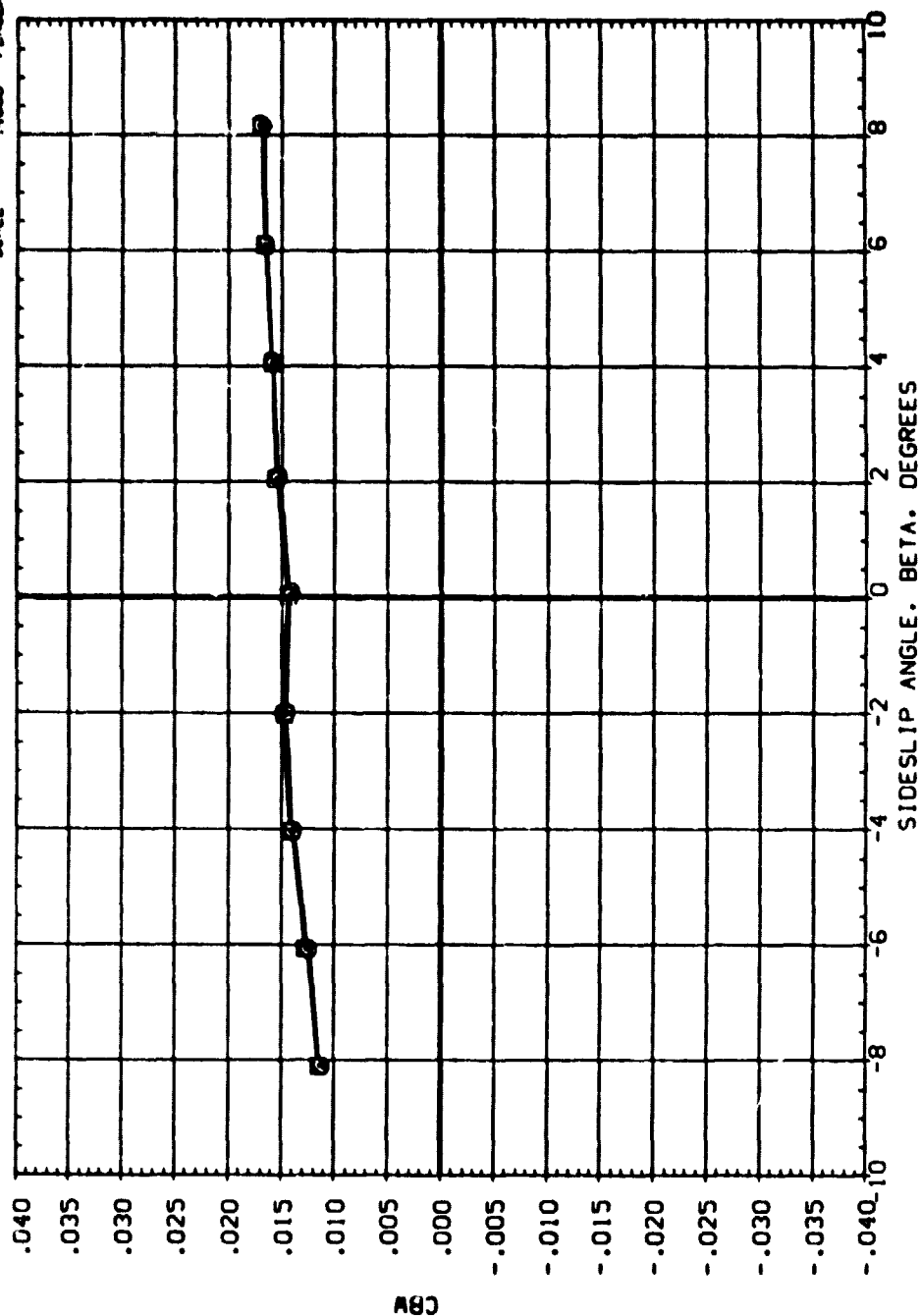
LREF 5.1612 IN.

BREF 3.7470 IN.

WREF 2.7120 IN.


ZREF .0000 IN.

SCALE .4000 PERCENT

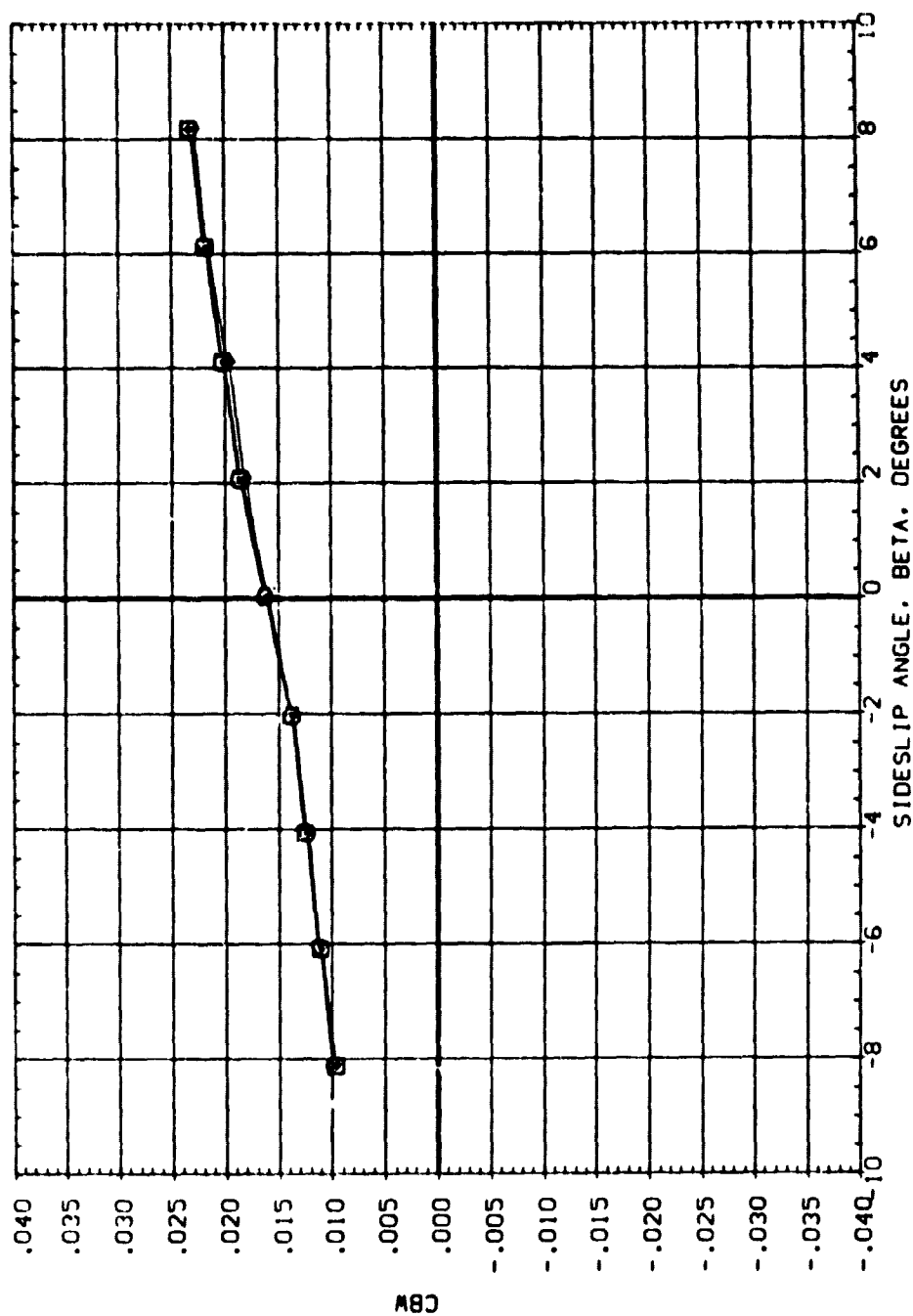


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION: ONZE20-PAATT353
 (FA2859) FA28: MSFC TWT 656: CONF IG: ONZE20-PAATT353
 (FA2861) FA28: MSFC TWT 656: CONF IG: ONZE20-PAATT353
 (FA2862) FA28: MSFC TWT 656: CONF IG: ONZE20-PAATT353

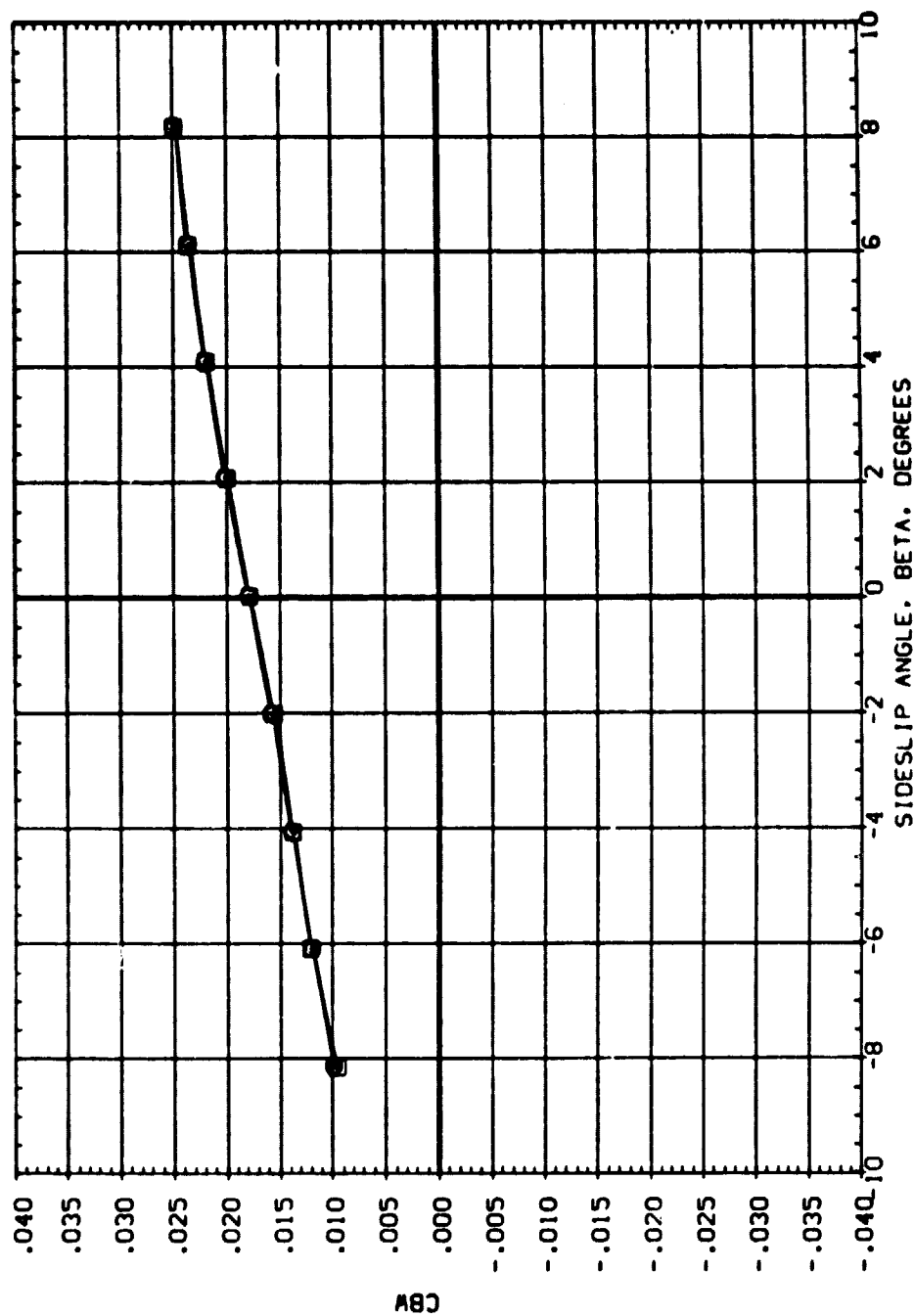
REFERENCE INFORMATION
 SREF: 6.1590 IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 XREF: 2.7120 IN.
 YREF: .0070 IN.
 ZREF: .0000 IN.
 SCALE: .4000 PERCENT



EFFECT OF BODY FLAP

(C)MACH = 1.05

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	REFERENCE INFORMATION
(FA2859)	FA28. MSFC TWT 656. CONF IG.	SRF 6.1260 IN.
(FA2861)	FA28. MSFC TWT 656. CONF IG.	LRF 5.1612 IN.
(FA2862)	FA28. MSFC TWT 656. CONF IG.	BRF 3.7470 IN.
		YRFP 2.7120 IN.
		ZRFP .0000 IN.
		SCALE .0000 PERCENT



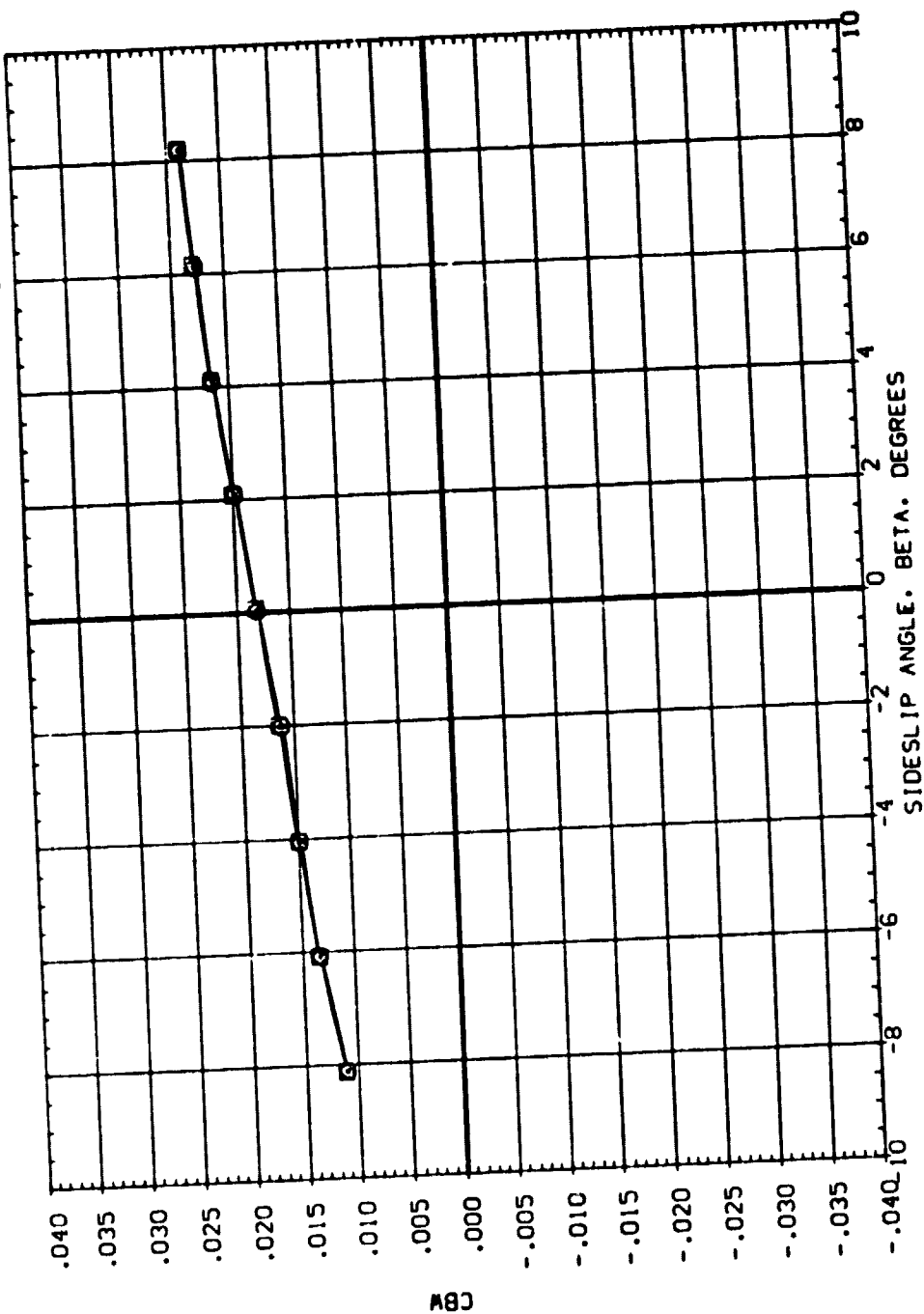
EFFECT OF BODY FLAP

(D)MACH = 1.10

REFERENCE INFORMATION
 SREF 6.1800 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 MREF 2.7170 IN.
 TREF .0000 IN.
 SCALE .0000 PERCENT

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) 0 0242E20MPAATT353
 (FA2859) 0 0242E20MPAATT353
 (FA2860) 0 0242E20MPAATT353
 (FA2861) 0 0242E20MPAATT353
 (FA2862) 0 0242E20MPAATT353

FA28: MFC TWT 656. COF 10.
 FA29: MFC TWT 656. COF 10.
 FA28: MFC TWT 656. COF 10.

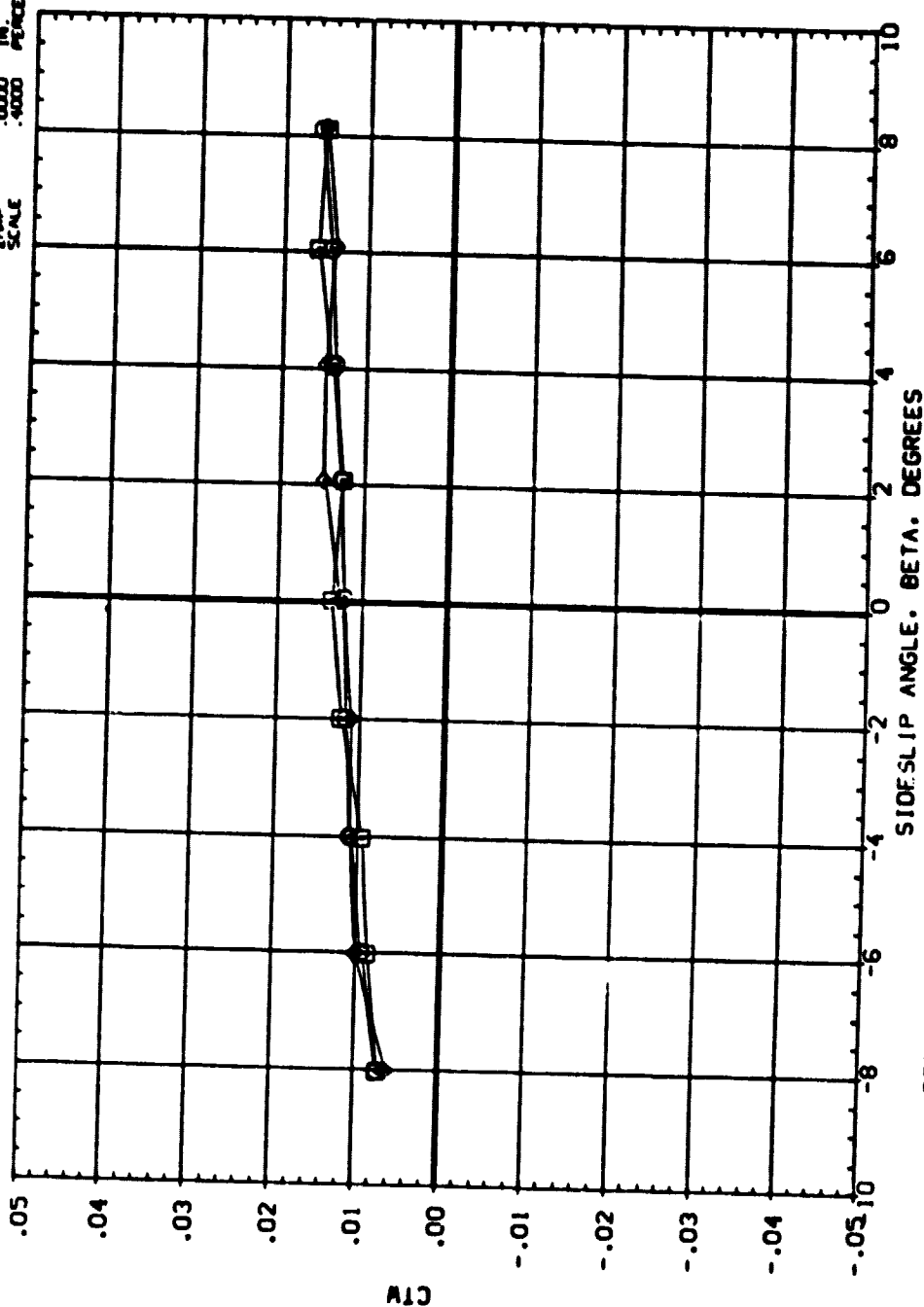


EFFECT OF BODY FLAP

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2059) 8 FA20: MSC TUT 6%: CDF IG. QNZE200AATT253
 (FA2062) 8 FA20: MSC TUT 6%: CDF IG. QNZE200AATT253
 (FA2062) 8 FA20: MSC TUT 6%: CDF IG. QNZE200AATT253

REFERENCE INFORMATION
 SHEET 6.1980 50. IN
 LINEF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT

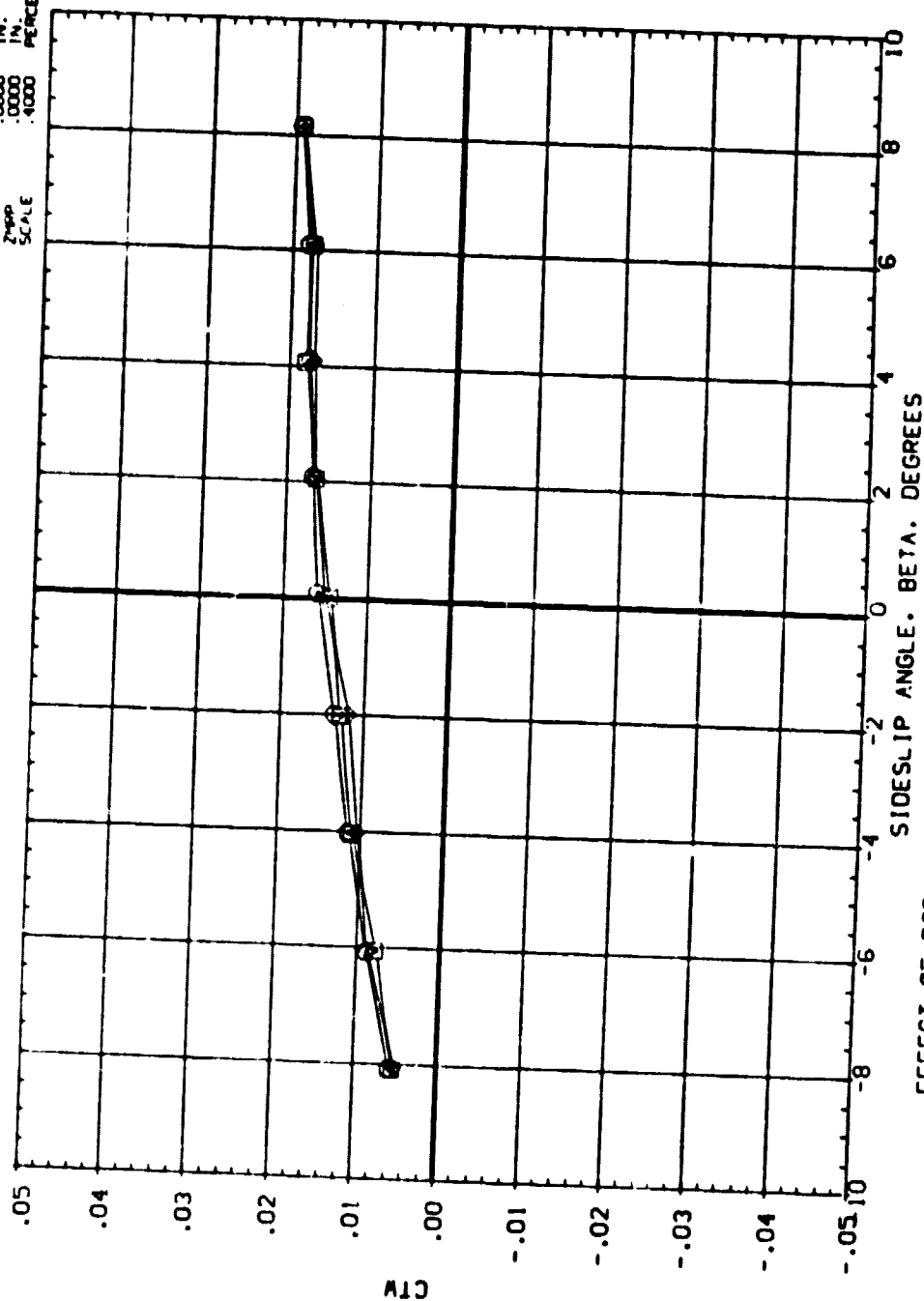


EFFECT OF BODY FLAP

(A)MACH = .60


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2829) FA28: M5C TWT 556. CONF IG. 02NZE20PAPAT1353
 (FA2861) FA28: M5C TWT 556. CONF IG. 02NZE20PAPAT1353
 (FA2862) FA28: M5C TWT 556. CONF IG. 02NZE20PAPAT1353

REFERENCE INFORMATION
 SREF 5.1800 90. IN
 LREF 5.1812 IN.
 BREF 2.7470 IN.
 XREF 2.7470 IN.
 YREF 0.0000 IN.
 ZREF 0.0000 IN.
 SCALE .4000 PERCENT

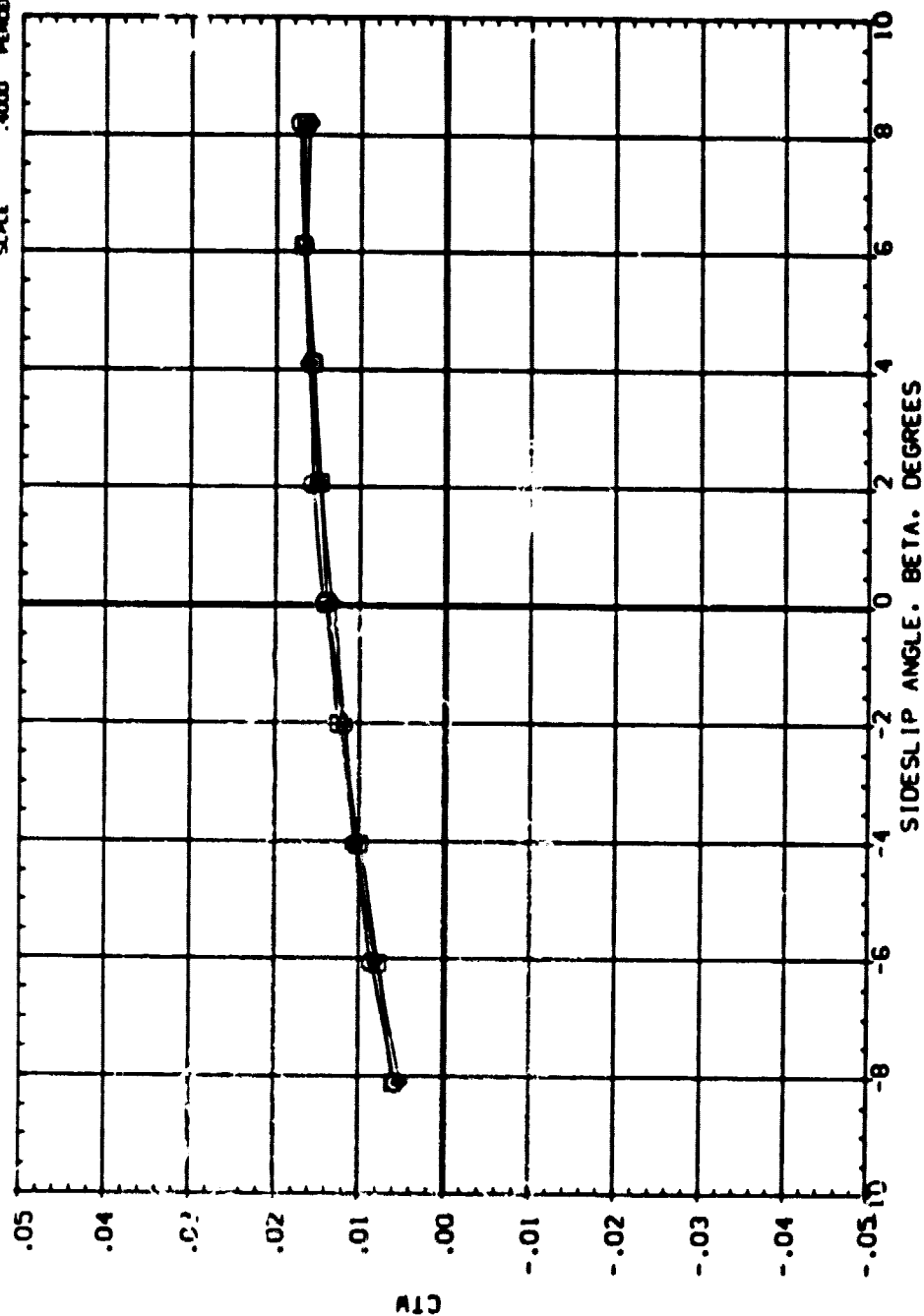


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FA2869) FA28. MSC. TWT 6.56. CONF 10. GVZLZMPAAT1253
 (FA2861) FA28. MSC. TWT 6.26. CONF 10. GVZLZMPAAT1253
 (FA2862) FA28. MSC. TWT 6.26. CONF 10. GVZLZMPAAT1253

REFERENCE INFORMATION:
 SREF 6.1360 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 PREF .0000 IN.
 SCALE .4000 PERCENT

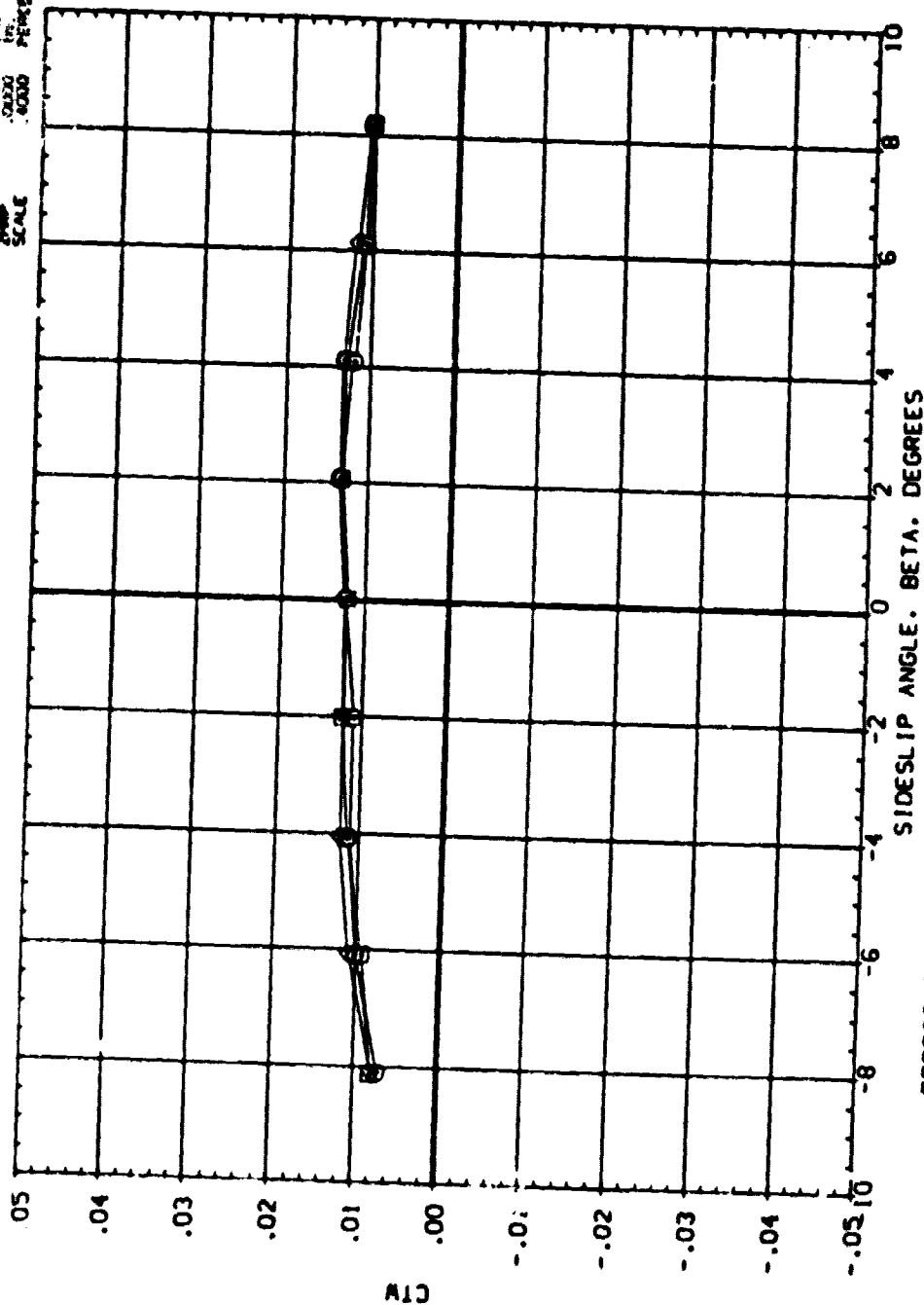


EFFECT OF BODY FLAP

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2021) 88 FA20: MSC TWT 656: CONF IG: QNVEZP00A11353
 (FA2021) 88 FA20: MSC TWT 656: CONF IG: QNVEZP00A11353
 (FA2021) 88 FA20: MSC TWT 656: CONF IG: QNVEZP00A11353

REFERENCE INFORMATION
 SET 8.1980 90. IN
 TWT 3.1612 IN.
 MSC 2.7120 IN.
 TWT 0.0000 IN.
 MSC 0.0000 IN.
 SCALE 4000 PERCENT



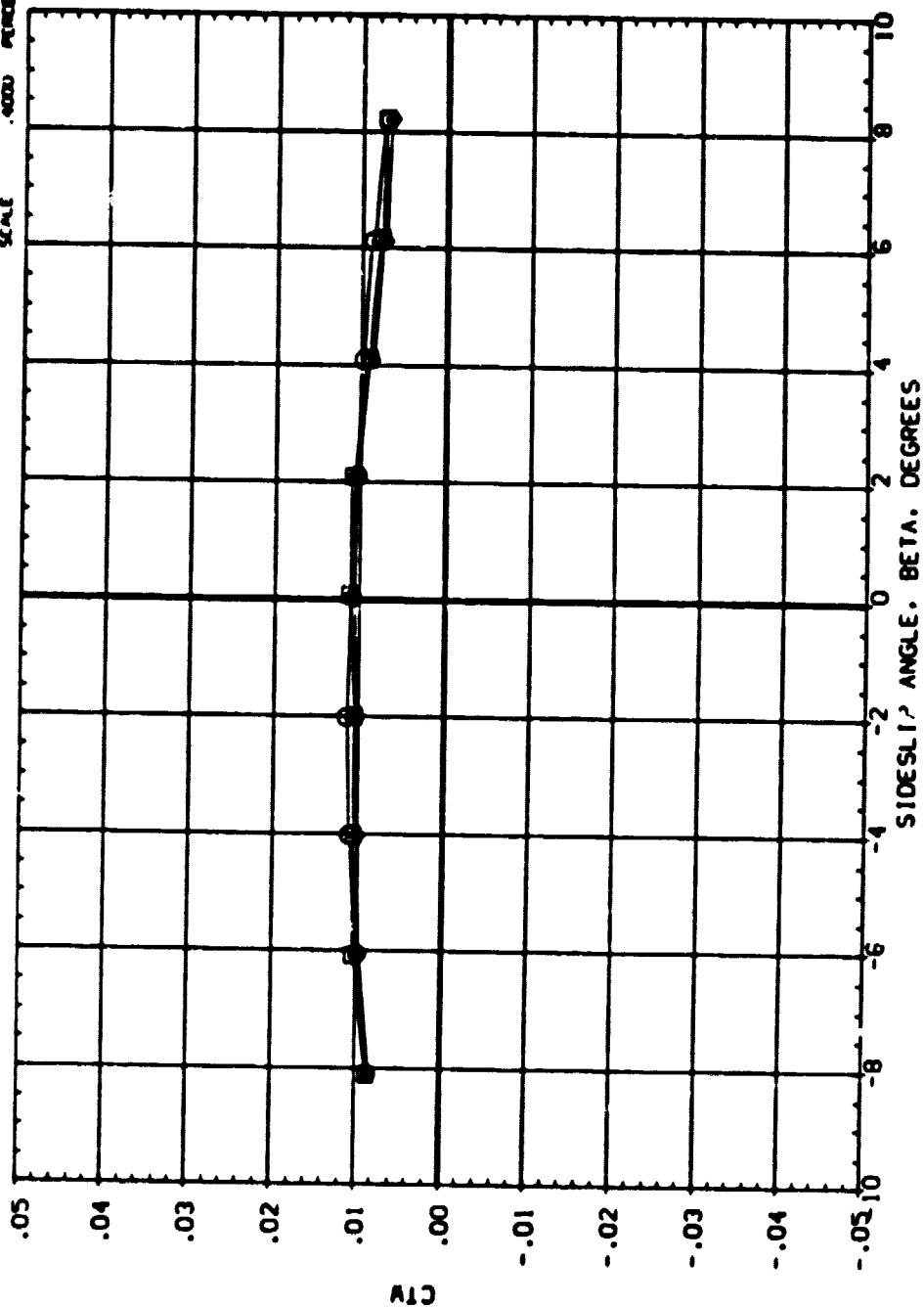
EFFECT OF BODY FLAP

(D)MACH = 1.10

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
1	100% of the data set
2	100% of the data set
3	100% of the data set
4	100% of the data set
5	100% of the data set
6	100% of the data set
7	100% of the data set
8	100% of the data set
9	100% of the data set
10	100% of the data set
11	100% of the data set
12	100% of the data set
13	100% of the data set
14	100% of the data set
15	100% of the data set
16	100% of the data set
17	100% of the data set
18	100% of the data set
19	100% of the data set
20	100% of the data set
21	100% of the data set
22	100% of the data set
23	100% of the data set
24	100% of the data set
25	100% of the data set
26	100% of the data set
27	100% of the data set
28	100% of the data set
29	100% of the data set
30	100% of the data set
31	100% of the data set
32	100% of the data set
33	100% of the data set
34	100% of the data set
35	100% of the data set
36	100% of the data set
37	100% of the data set
38	100% of the data set
39	100% of the data set
40	100% of the data set
41	100% of the data set
42	100% of the data set
43	100% of the data set
44	100% of the data set
45	100% of the data set
46	100% of the data set
47	100% of the data set
48	100% of the data set
49	100% of the data set
50	100% of the data set
51	100% of the data set
52	100% of the data set
53	100% of the data set
54	100% of the data set
55	100% of the data set
56	100% of the data set
57	100% of the data set
58	100% of the data set
59	100% of the data set
60	100% of the data set
61	100% of the data set
62	100% of the data set
63	100% of the data set
64	100% of the data set
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66	100% of the data set
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69	100% of the data set
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71	100% of the data set
72	100% of the data set
73	100% of the data set
74	100% of the data set
75	100% of the data set
76	100% of the data set
77	100% of the data set
78	100% of the data set
79	100% of the data set
80	100% of the data set
81	100% of the data set
82	100% of the data set
83	100% of the data set
84	100% of the data set
85	100% of the data set
86	100% of the data set
87	100% of the data set
88	100% of the data set
89	100% of the data set
90	100% of the data set
91	100% of the data set
92	100% of the data set
93	100% of the data set
94	100% of the data set
95	100% of the data set
96	100% of the data set
97	100% of the data set
98	100% of the data set
99	100% of the data set
100	100% of the data set




DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DATE PROGRAMMED
(FAB208)	FAB20 MFC TWT 656. COM 1G.	02/28/2000A11353
(FAB209)	FAB20 MFC TWT 656. COM 1G.	02/28/2000A11353
(FAB262)	FAB20 MFC TWT 656. COM 1G.	02/28/2000A11353

FUNDING INFORMATION	
2007	\$ 1,280
2008	\$ 612
2009	\$ 7470
2010	\$ 7120
2011	\$ 0000
2012	\$ 0000
2013	\$ 0000
SCALE	PERCENT

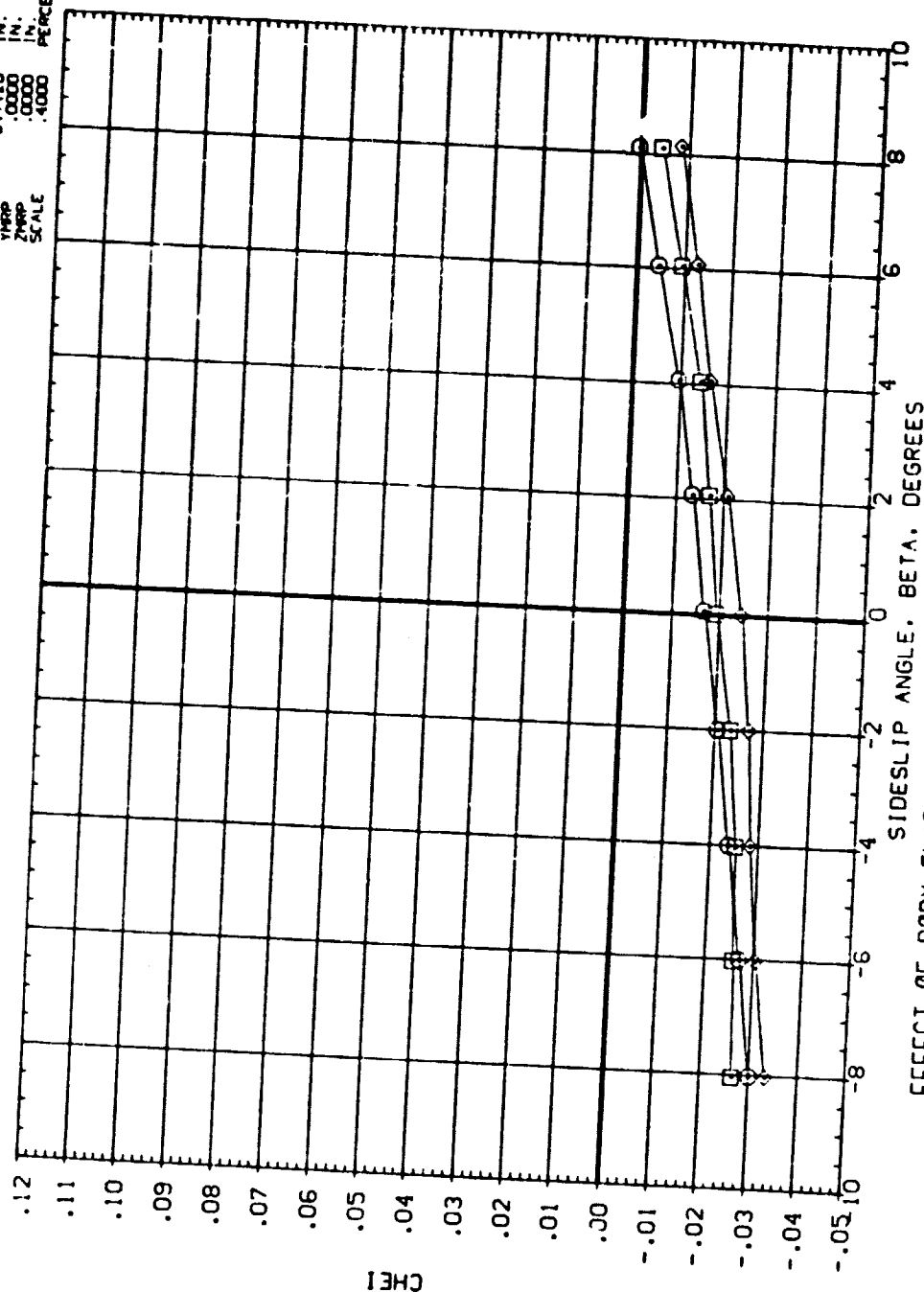


EFFECT OF BODY FLAP

$$(E)_{MACH} = 1.25$$

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2059)  FA20. MSC TWT 556. COF IG. QNVEZMPAATTJ53
 (FA2060)  FA20. MSC TWT 646. COF IG. QNVEZMPAATTJ53
 (FA2062)  FA20. MSC TWT 646. COF IG. QNVEZMPAATTJ53

REFERENCE INFORMATION
 SREF 8.1260 50. IN
 LREF 1.1612 IN.
 BREF 2.7120 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE 4000 PERCENT

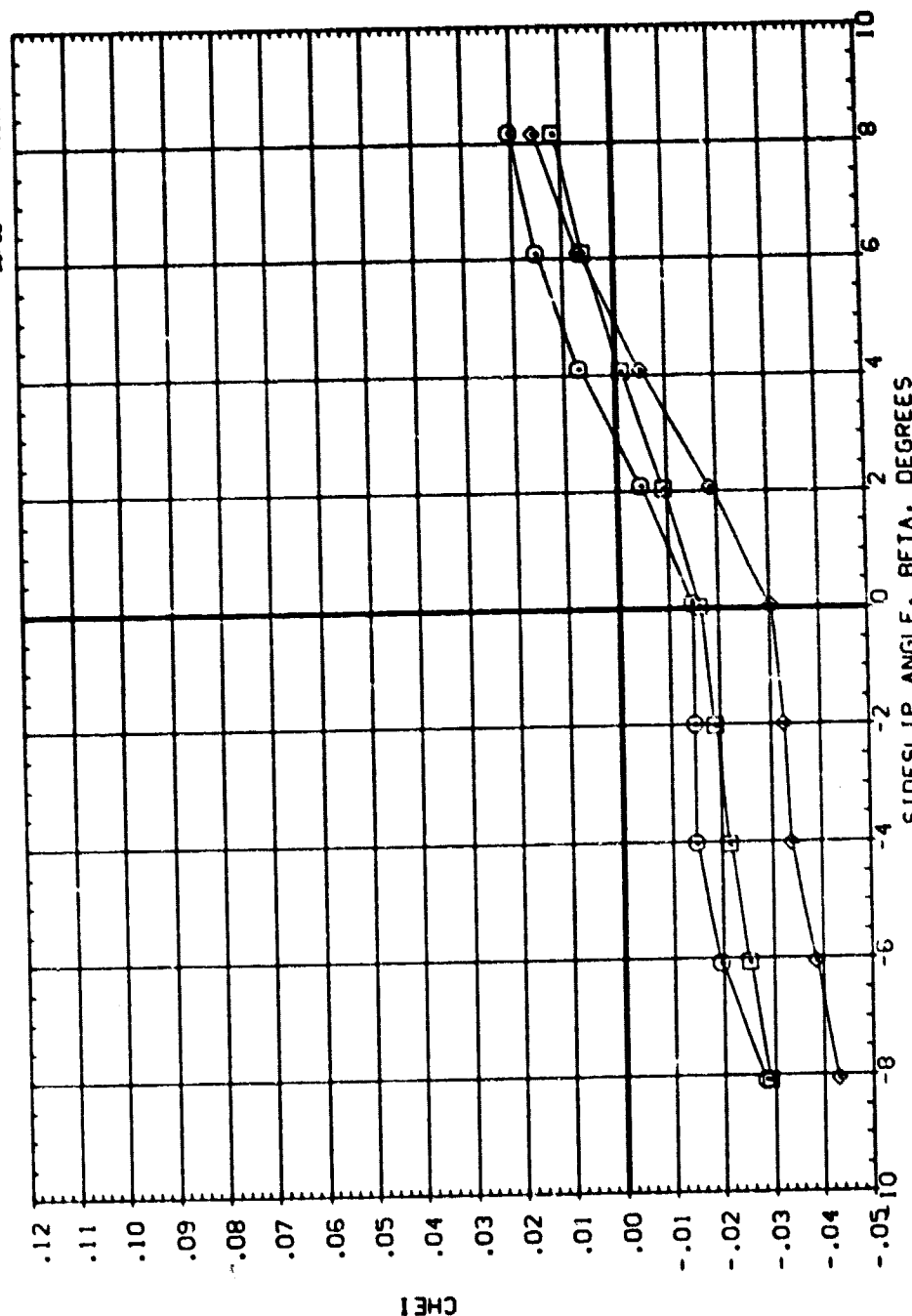


EFFECT OF BODY FLAP

(A)MACH = .60

REFERENCE INFORMATION
 SREF 6.1580 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 YREF 2.7120 IN
 YPROP .0000 IN
 ZPROP .0000 IN
 SCALE .4000 PERCENT

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2059) FA28. MSFC TVT 656. CDF IG. 02VZEPAPAAIT253
 (FA2061) FA28. MSFC TVT 656. CDF IG. 02VZEPAPAAIT253
 (FA2062) FA28. MSFC TVT 656. CDF IG. 02VZEPAPAAIT253

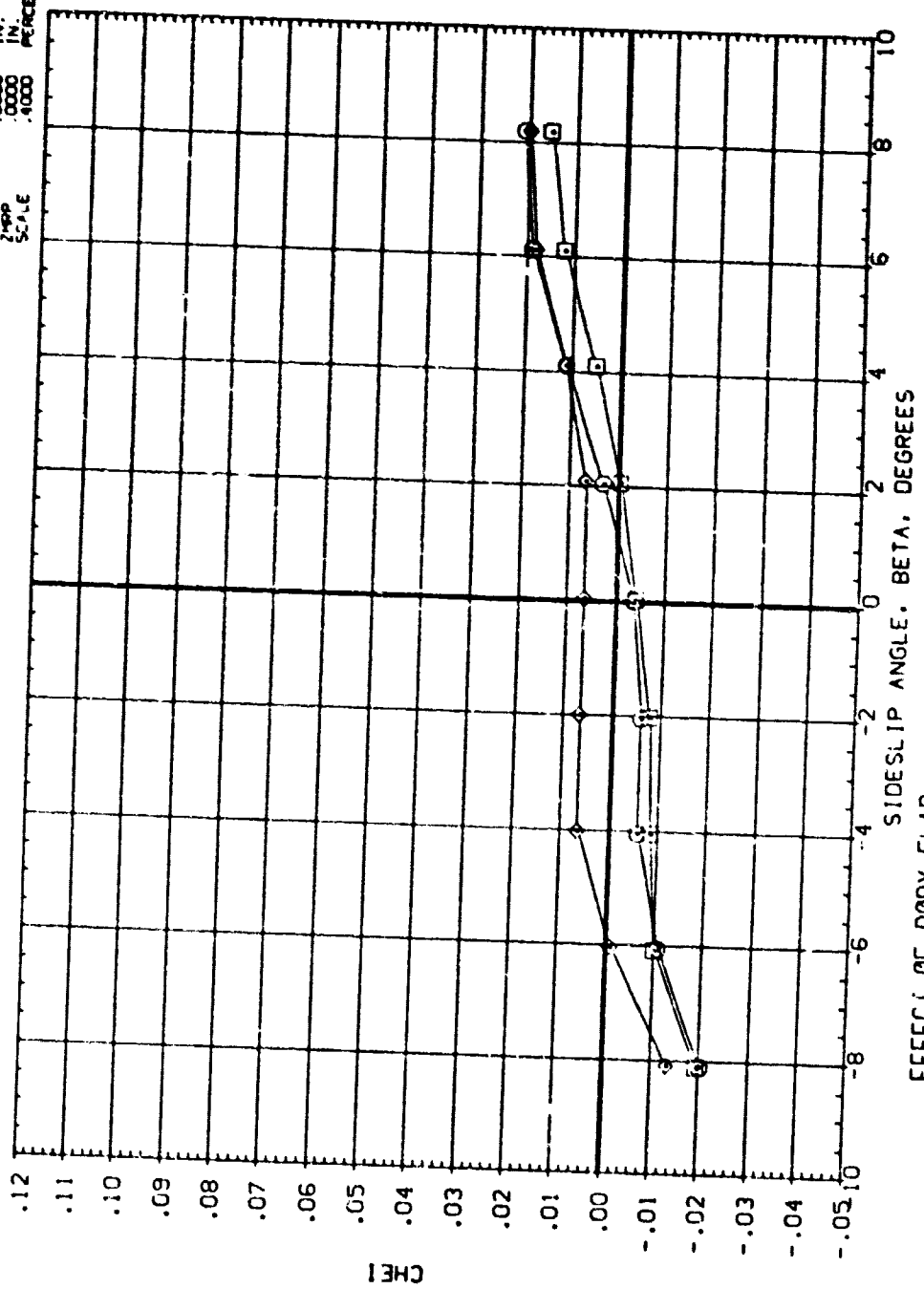


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2059) FA20. WSC TVT 856. CONF 1G. C2NZE COMPAT 753
 (FA2461) FA23. WSC TVT 856. CONF 1G. C2NZE COMPAT 753
 (FA2662) FA28. WSC TVT 856. CONF 1G. C2NZE COMPAT 753

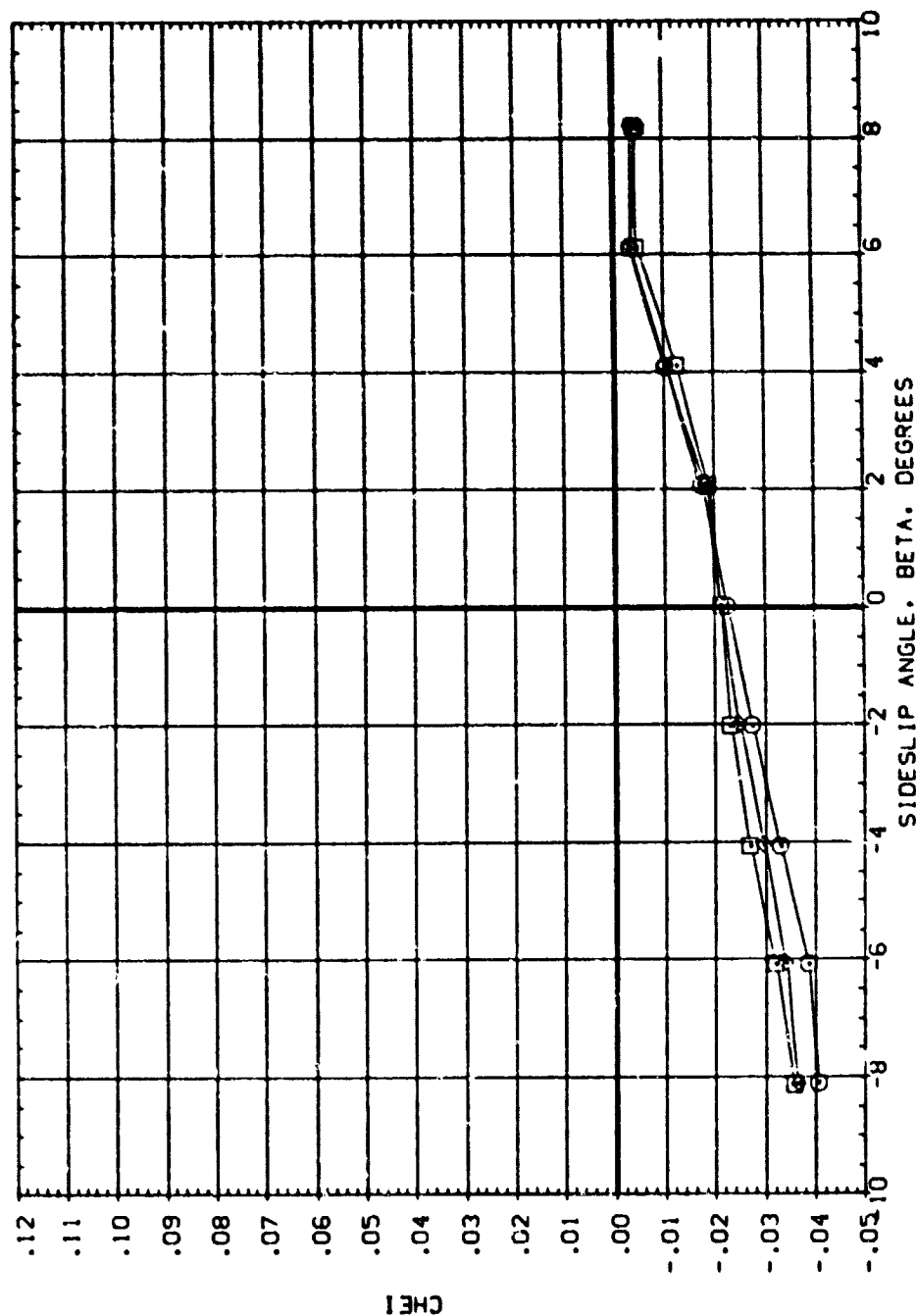
REFERENCE INFORMATION
 SREF 8.1980 50. IN
 LREF 3.1612 IN.
 BREF 3.1470 IN.
 1HOP 2.7120 IN.
 2HOP .0000 IN.
 SCALE .4000 PERCENT



(C)MACH = 1.05

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FA2059) F20: MSC 147 656. CONF 10. 02NZE 20NPA11753
 (FA2061) F20: MSC 147 656. CONF 10. 02NZE 20NPA11753
 (FA2062) F20: MSC 147 656. CONF 10. 02NZE 20NPA11753

REFERENCE INFORMATION:
 CREF 6.1260 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

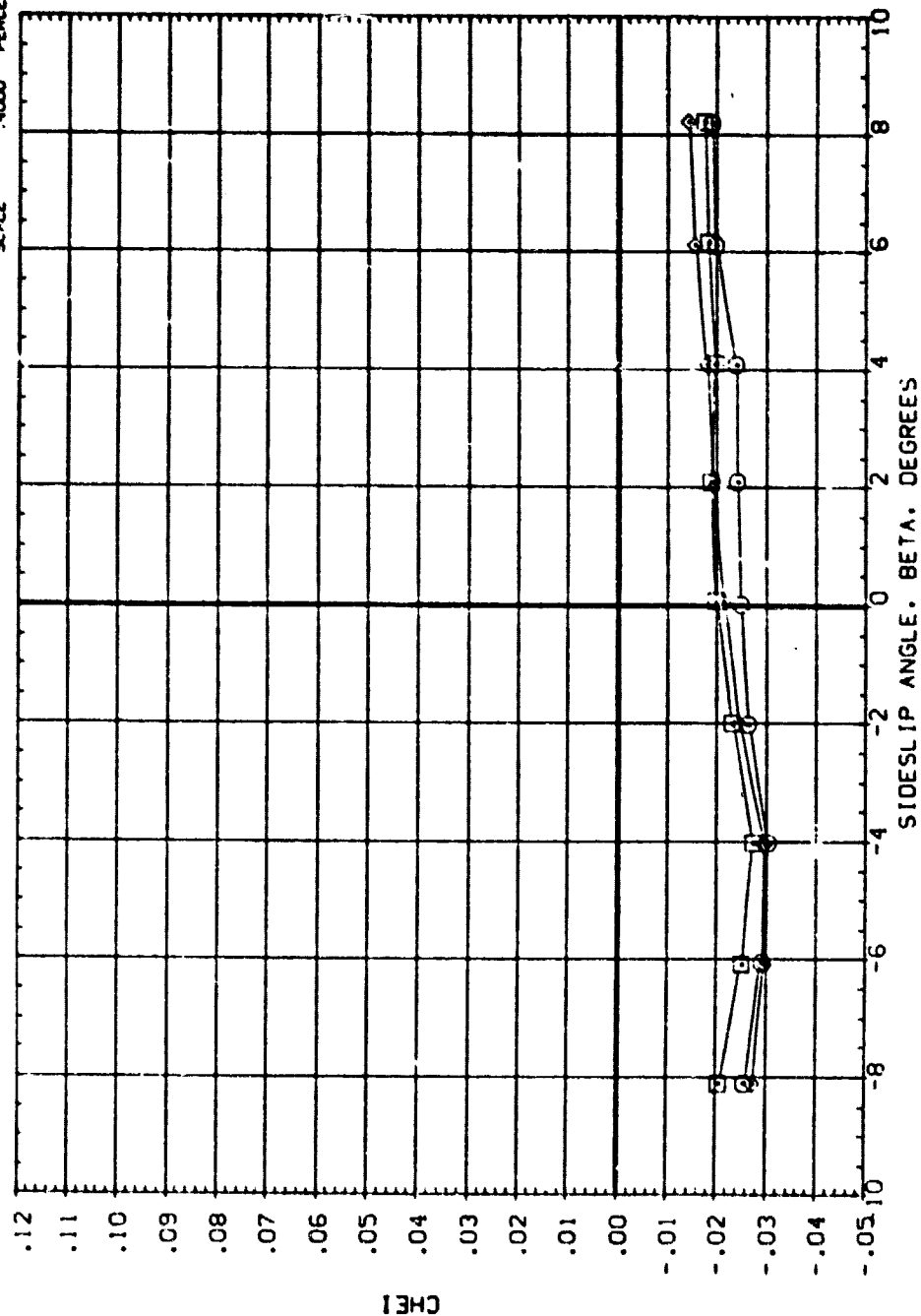


EFFECT OF BODY FLAP

(D)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2859) FA28. MSFC TVT 656. CONF 10. 02NZE20APAAIT353
 (FA2861) FA28. MSFC TVT 656. CONF 10. 02NZE20APAAIT353
 (FA2862) FA28. MSFC TVT 656. CONF 10. 02NZE20APAAIT353

REFERENCE INFORMATION
 SREF 6.1260 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

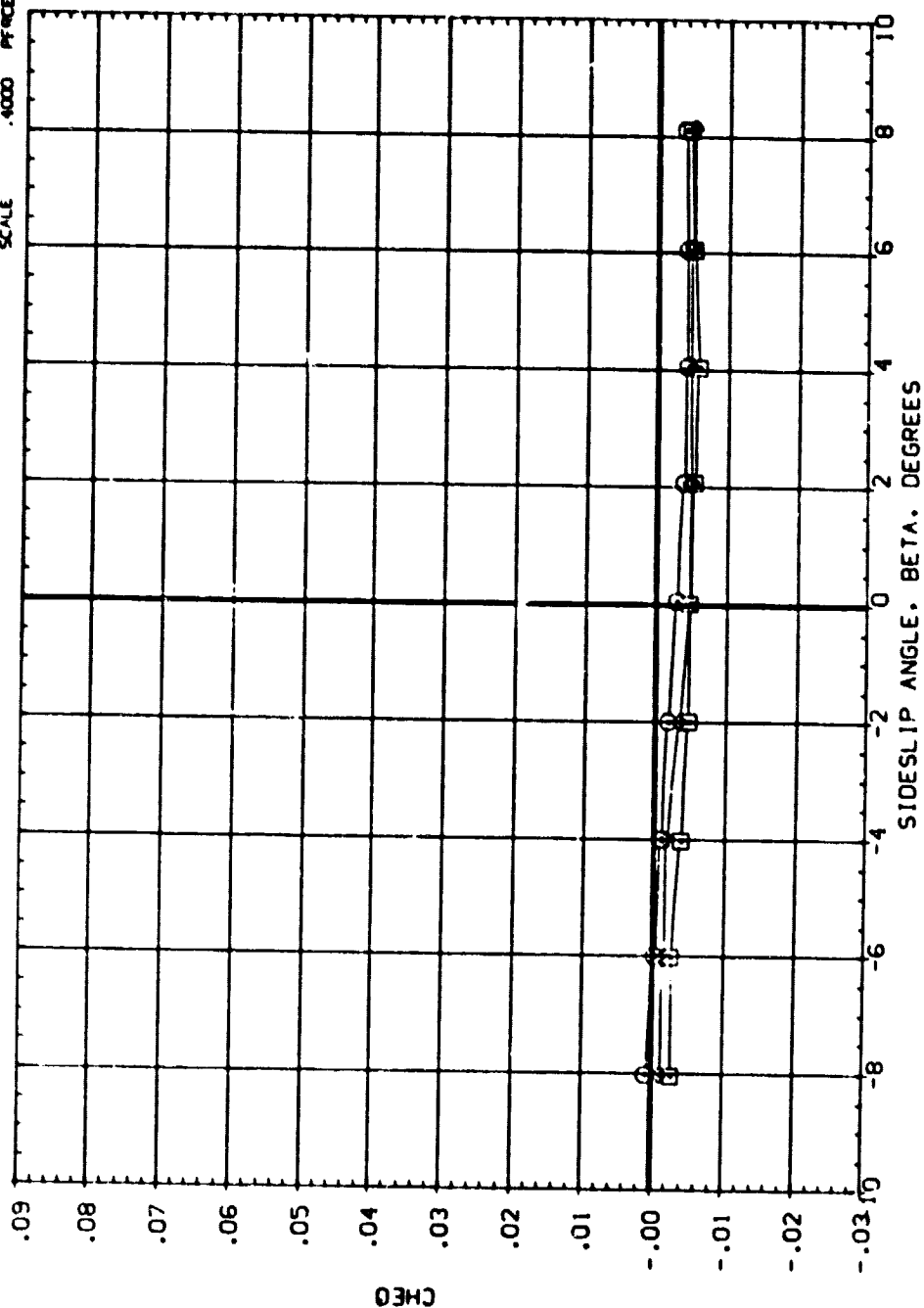


EFFECT OF BODY FLAP

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 1E2089) 100% 100% 100% 100% 100% 100% 100% 100% 100% 100%
 1E2081) 100% 100% 100% 100% 100% 100% 100% 100% 100% 100%
 1E2082) 100% 100% 100% 100% 100% 100% 100% 100% 100% 100%

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XPROP 2.7120 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF BODY FLAP

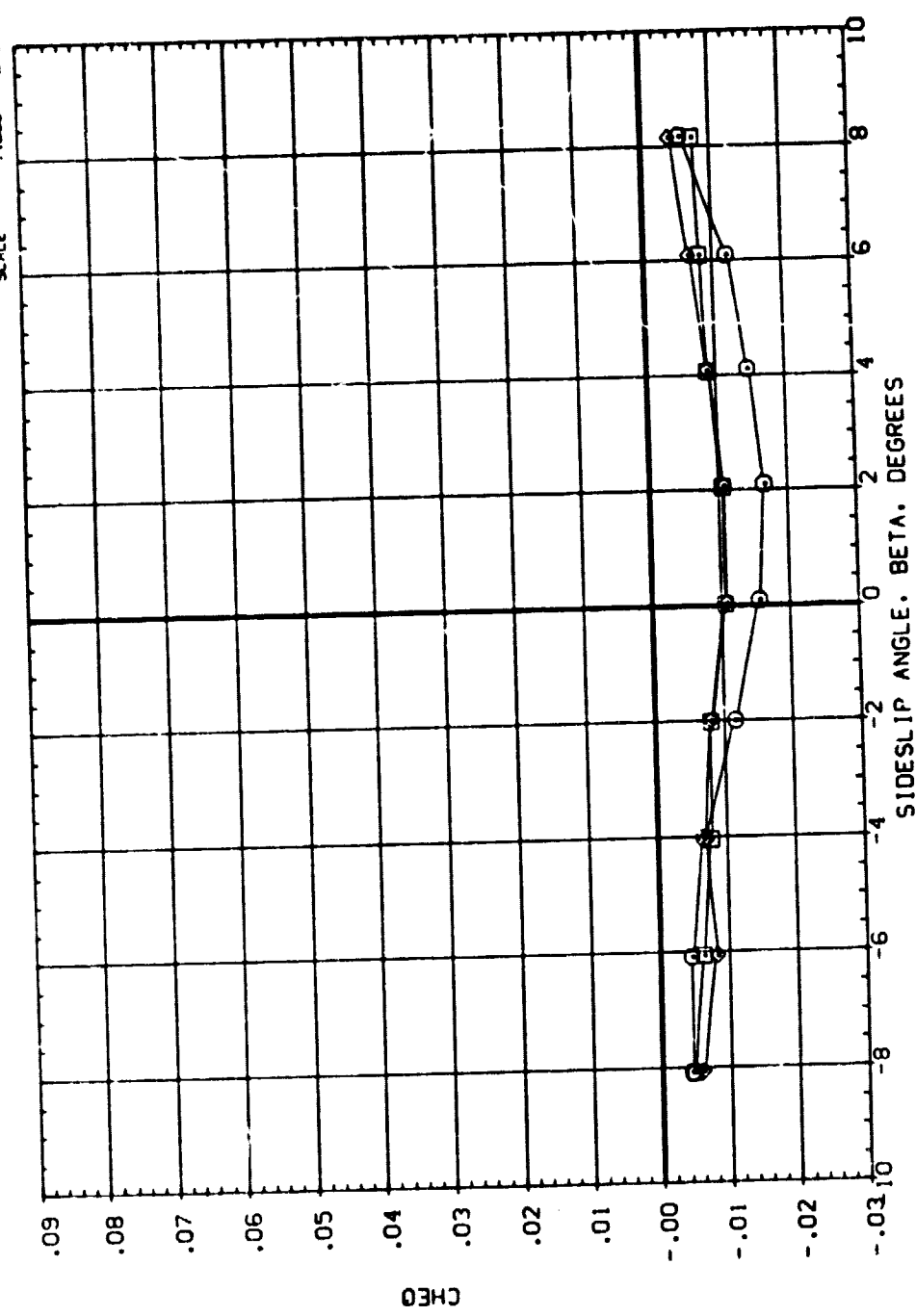
(A)MACH = .60

REFERENCE INFORMATION

REF	IN.	IN.	IN.
SPR	6.1980	50.	IN.
LEP	5.1612	IN.	IN.
BRP	3.7470	IN.	IN.
TRP	2.7120	IN.	IN.
TRP	.0000	IN.	IN.
TRP	.0000	IN.	IN.
SCALE	.0000	PERCENT	

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FA2659)	FA26. MSC 10" 656. COF G.	ONZE 200PATT:353
(FA2661)	FA26. MSC 10" 656. COF G.	ONZE 200PATT:353
(FA2662)	FA26. MSC 10" 656. COF G.	ONZE 200PATT:353

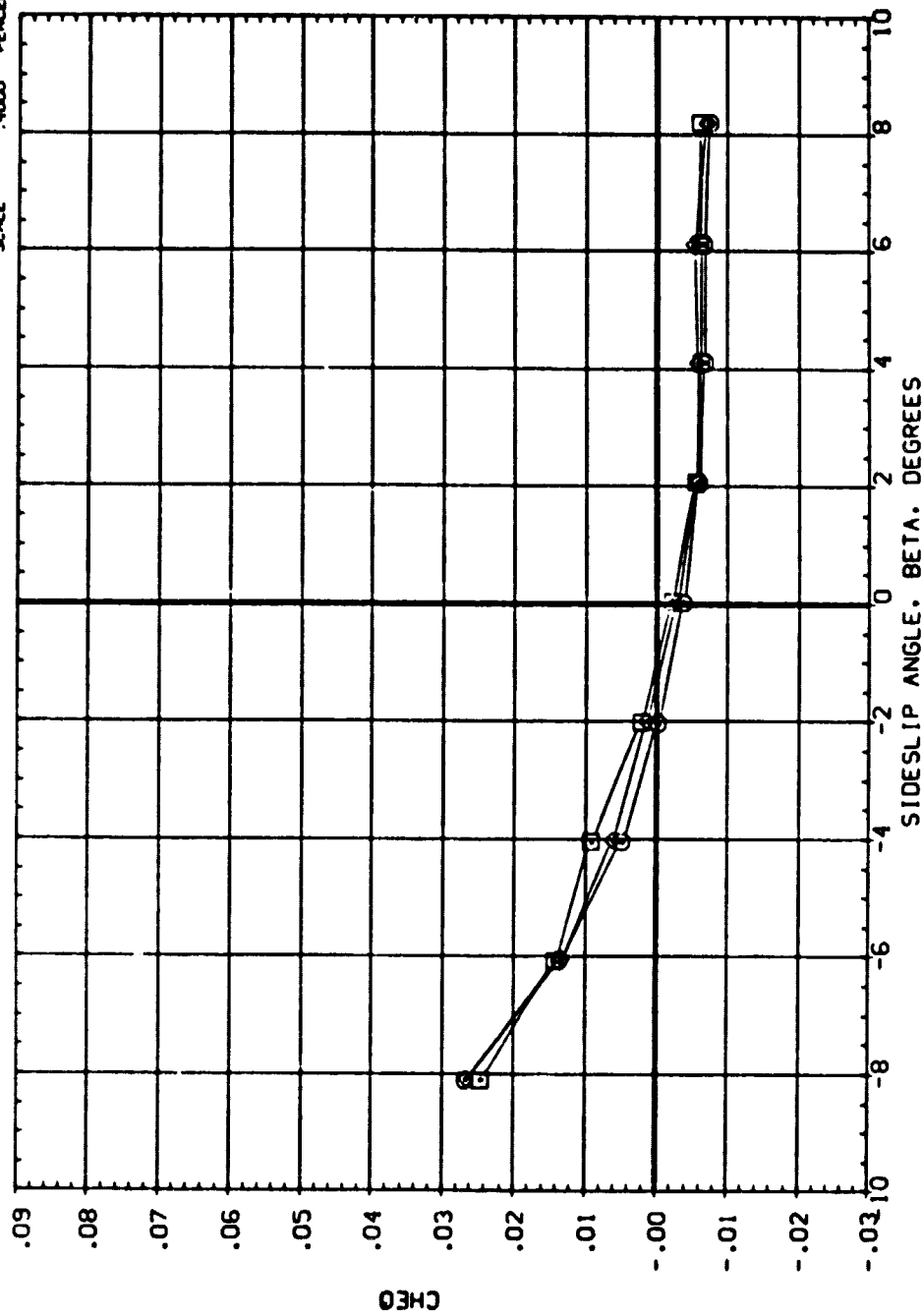


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2059) FA20. MSFC TWT 556. CONF IG. 02VXZ 20PAATTJ53
 (FA2061) FA20. MSFC TWT 556. CONF IG. 02VXZ 20PAATTJ53
 (FA2062) FA20. MSFC TWT 556. CONF IG. 02VXZ 20PAATTJ53

REFERENCE INFORMATION
 SREF 6.1980 90. IN
 TREF 3.1612 IN.
 WREF 2.7170 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

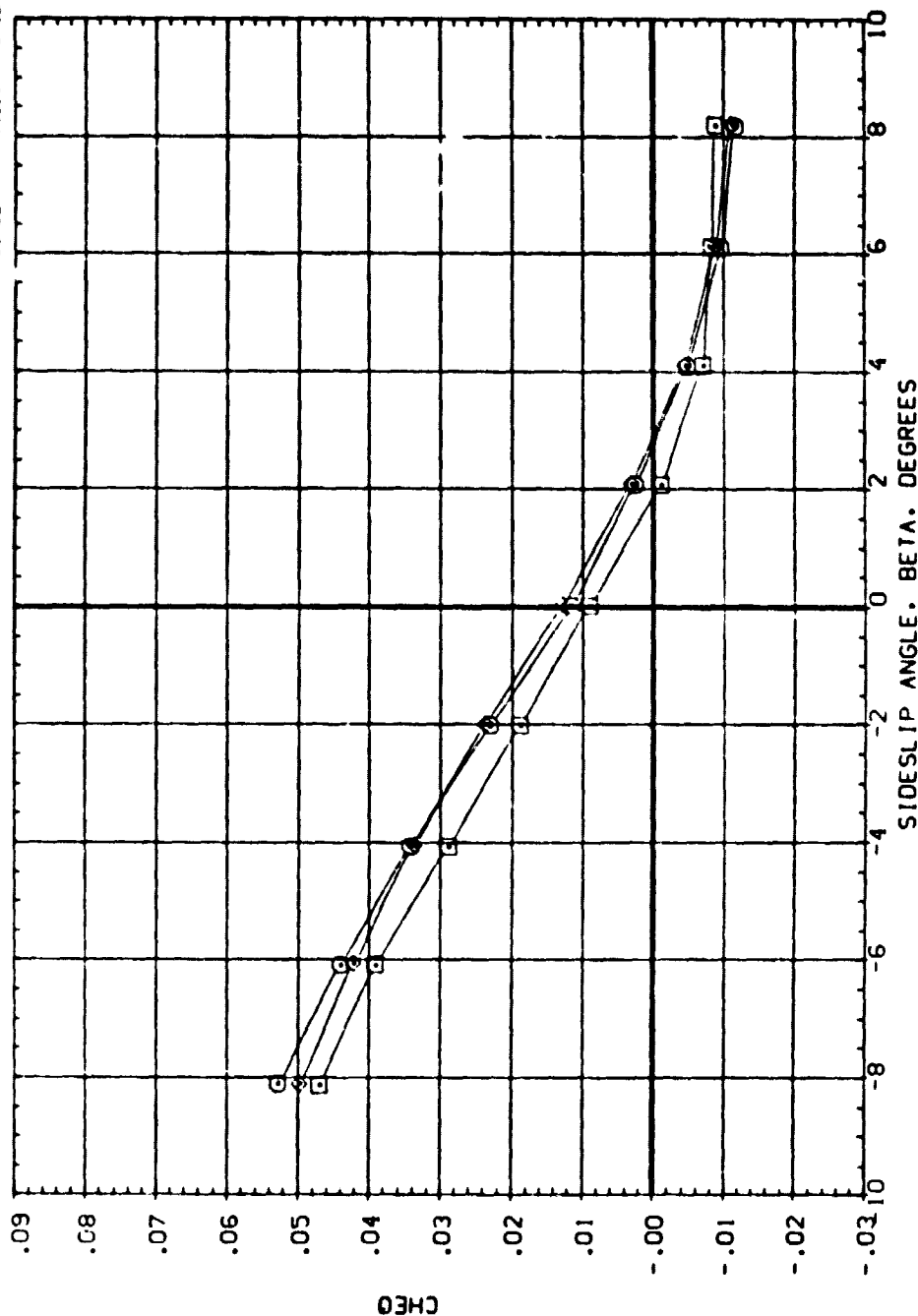


EFFECT OF BODY FLAP

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION REFERENCE INFORMATION

(FA2059)	FA28. MSC TWT 656. CONF 1G.	SRF 5.1980 IN.
(FA2061)	FA28. MSC TWT 656. CONF 1G.	LRP 5.1612 IN.
(FA2062)	FA28. MSC TWT 656. CONF 1G.	SRF 3.7470 IN.
		YMRP 2.7120 IN.
		ZMRP .0000 IN.
		SCALE .4000 PERCENT

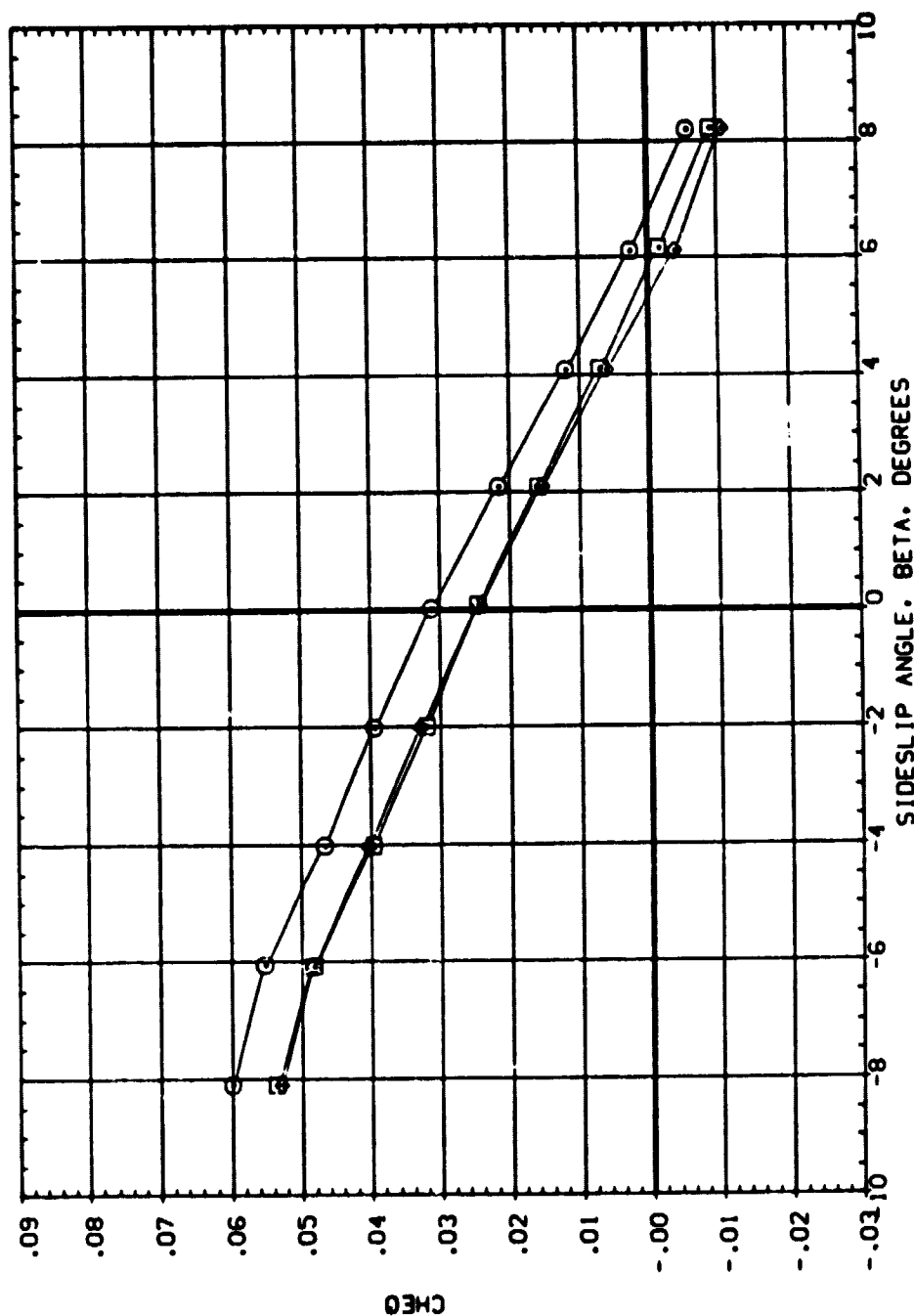


EFFECT OF BODY FLAP

(D)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION REFERENCE INFORMATION

1FA2859	FA28. MSC TVT 6.56. CONF 10. 02VZEPAA11253	SHEET 6.1980 50. IN
1FA2861	FA28. MSC TVT 6.56. CONF 10. 02VZEPAA11253	LINE 5.1612 IN.
1FA2862	FA28. MSC TVT 6.56. CONF 10. 02VZEPAA11253	SHEET 3.7470 IN.
		YPROP .0000 IN.
		ZPROP .0000 IN.
		SCALE .4000 PERCENT

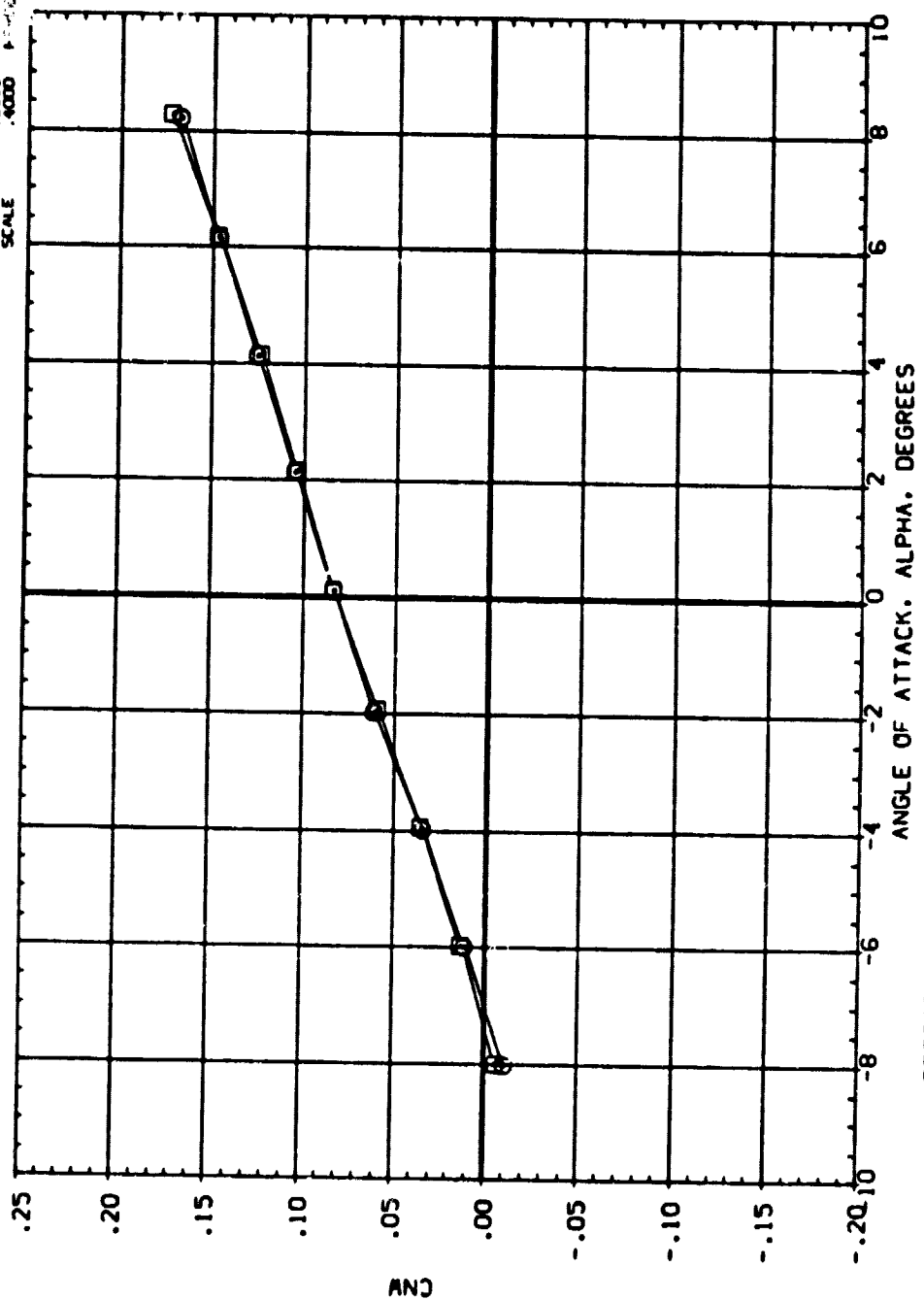


EFFECT OF BODY FLAP

(E)MACH = 1.25

DATA SET SYMBOL: **Q** CONFIGURATION DESCRIPTION:
 (FA2058) FA20. MSC TWT 656. CONF IG. QNZE JPMHAT153
 (FA2064) FA20. MSC TWT 656. CONF IG. QNZE JPMHAT153

REFERENCE INFORMATION
 SREF 6.1980 SO. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000

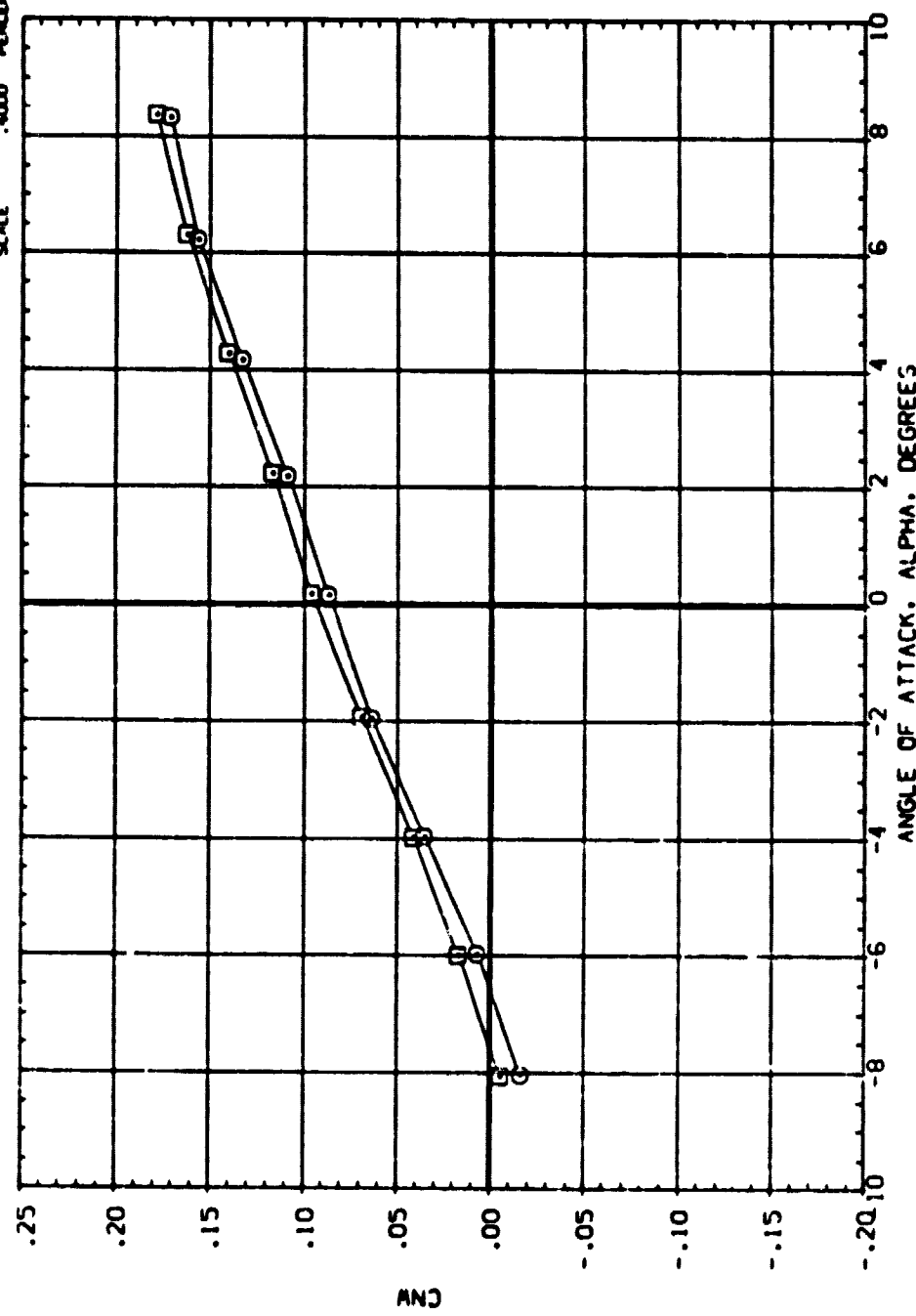


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

WTA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA28) 1 □ FA28. HSC TWT 65%. CONF 16. CONF 28. CONF 16. CONF 28. CONF 16. CONF 28.
 (FA28) 1 □ FA28. HSC TWT 65%. CONF 16. CONF 28. CONF 16. CONF 28. CONF 16. CONF 28.

REFERENCE INFORMATION
 SHEET 6.1530 50. IN
 LINE 5.1612 IN.
 BREF 3.7470 IN.
 TROP 2.7120 IN.
 TROP .0000 IN.
 SCALE .0000 IN.
 PERCH .4000

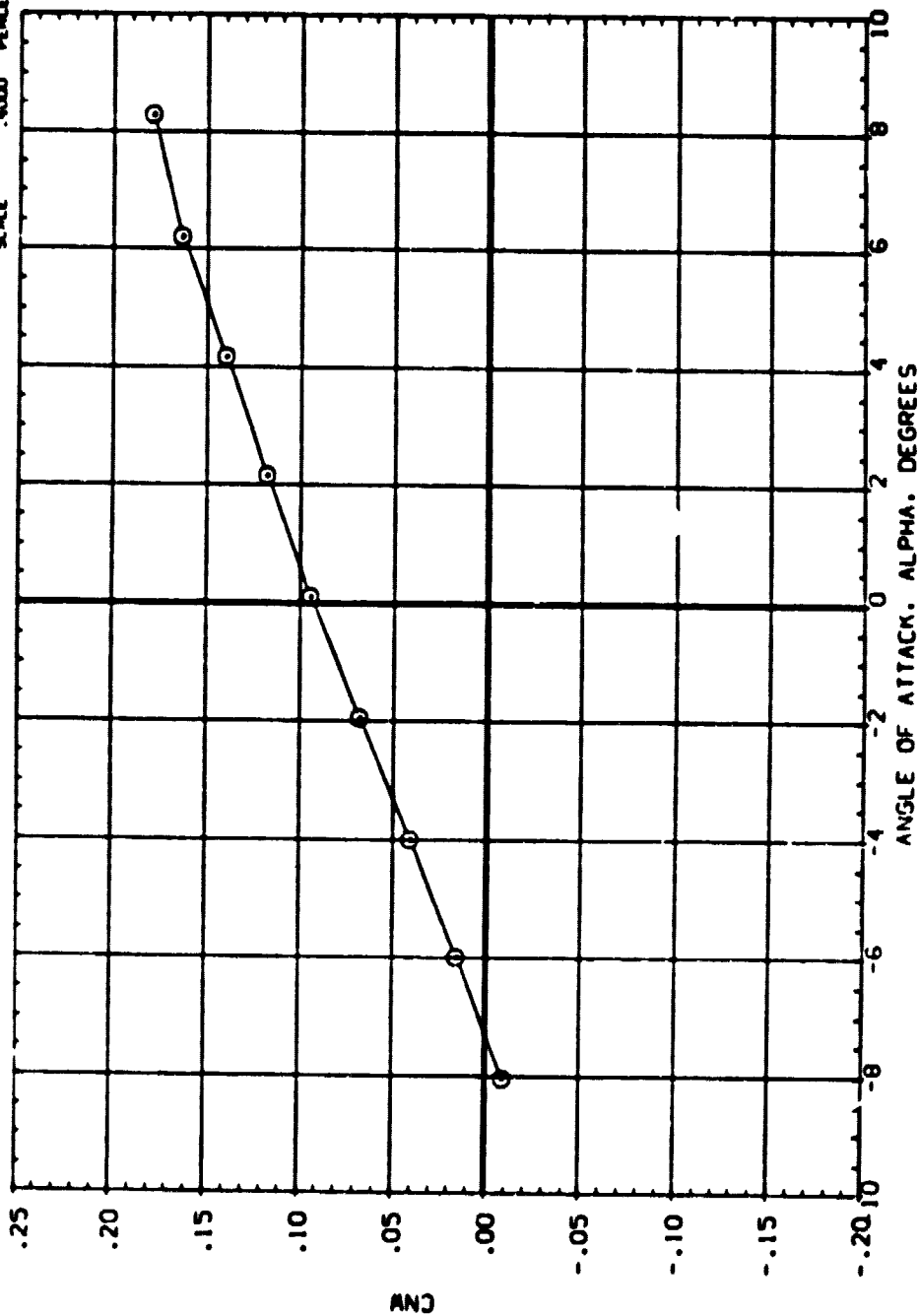


EFFECT OF REYNOLDS NUMBER

(B)MACH = .90

DATA SET SYMBOL: (FA2858) CONFIGURATION DESCRIPTION: FA28. MSC TWT 65%. CONF IG. CONVECTIONAL 353
 (FA2864) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF: 8.1880 SQ. IN.
 LREF: 3.1812 IN.
 MREF: 2.1470 IN.
 WREF: 2.7120 IN.
 WREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT

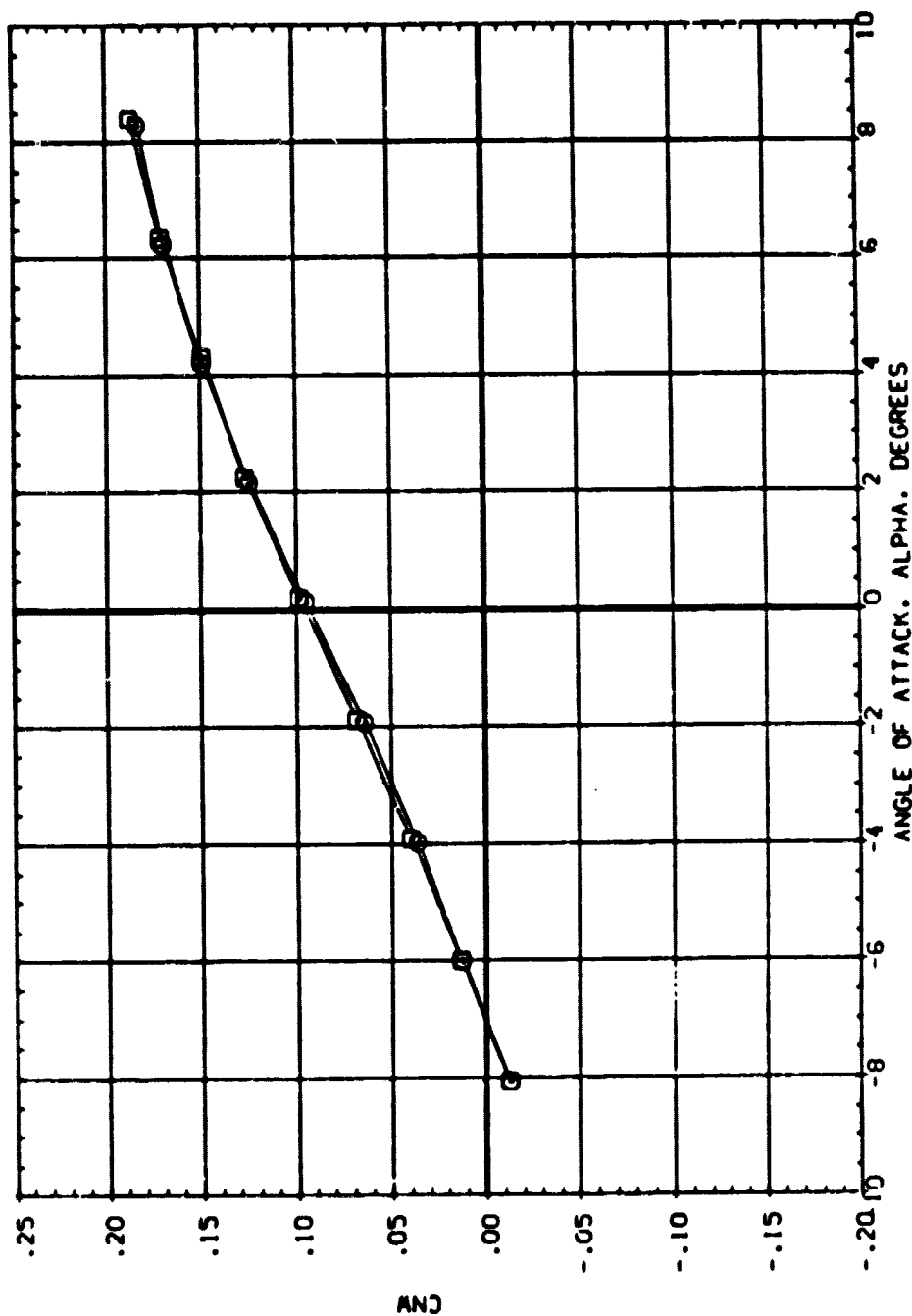


EFFECT OF REYNOLDS NUMBER

(C)MACH = .95

DATA SET SYMBOL: CONFIDENCE DESCRIPTION
 (FA28) 10 65% CONFIDENCE
 (FA28) 10 65% CONFIDENCE

REFERENCE INFORMATION
 SET 100 10. IN
 LAY 1012 10. IN
 SAMP 2.7120 10. IN
 TEMP 0.0000 10. IN
 SCALE 0.0000 10. IN
 FORCE 0.0000 10. IN

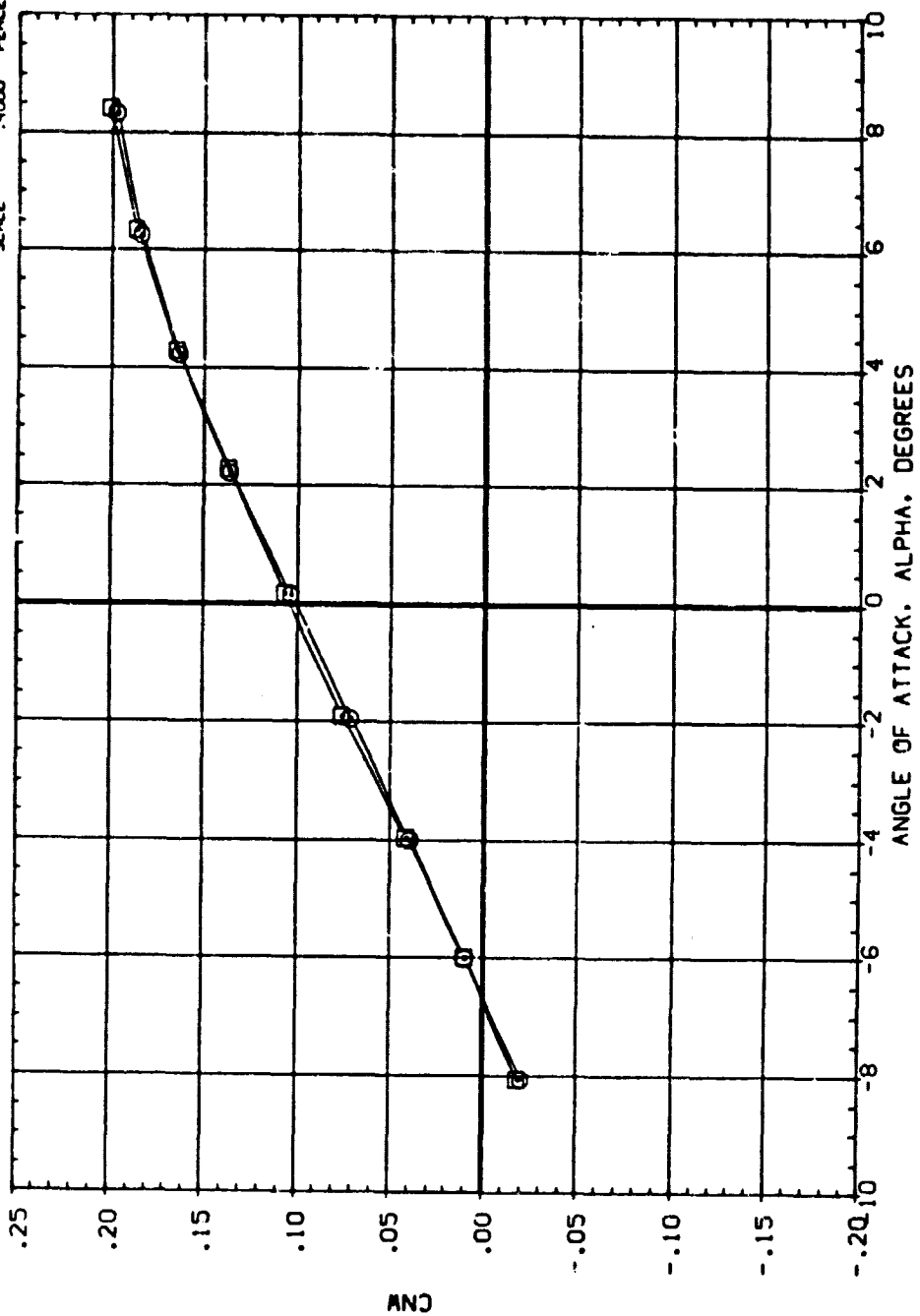


EFFECT OF REYNOLDS NUMBER

(0)MACH = 1.05

DATA SET SYMBOL: \square CONFIGURATION DESCRIPTION:
 (FA2858) FA28, MSFC TW 556, CONFIG: 02VZEPAPAT1353
 (FA2864) FA28, MSFC TW 556, CONFIG: 02VZEPAPAT1353

REFERENCE INFORMATION
 SREF 6.1960 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

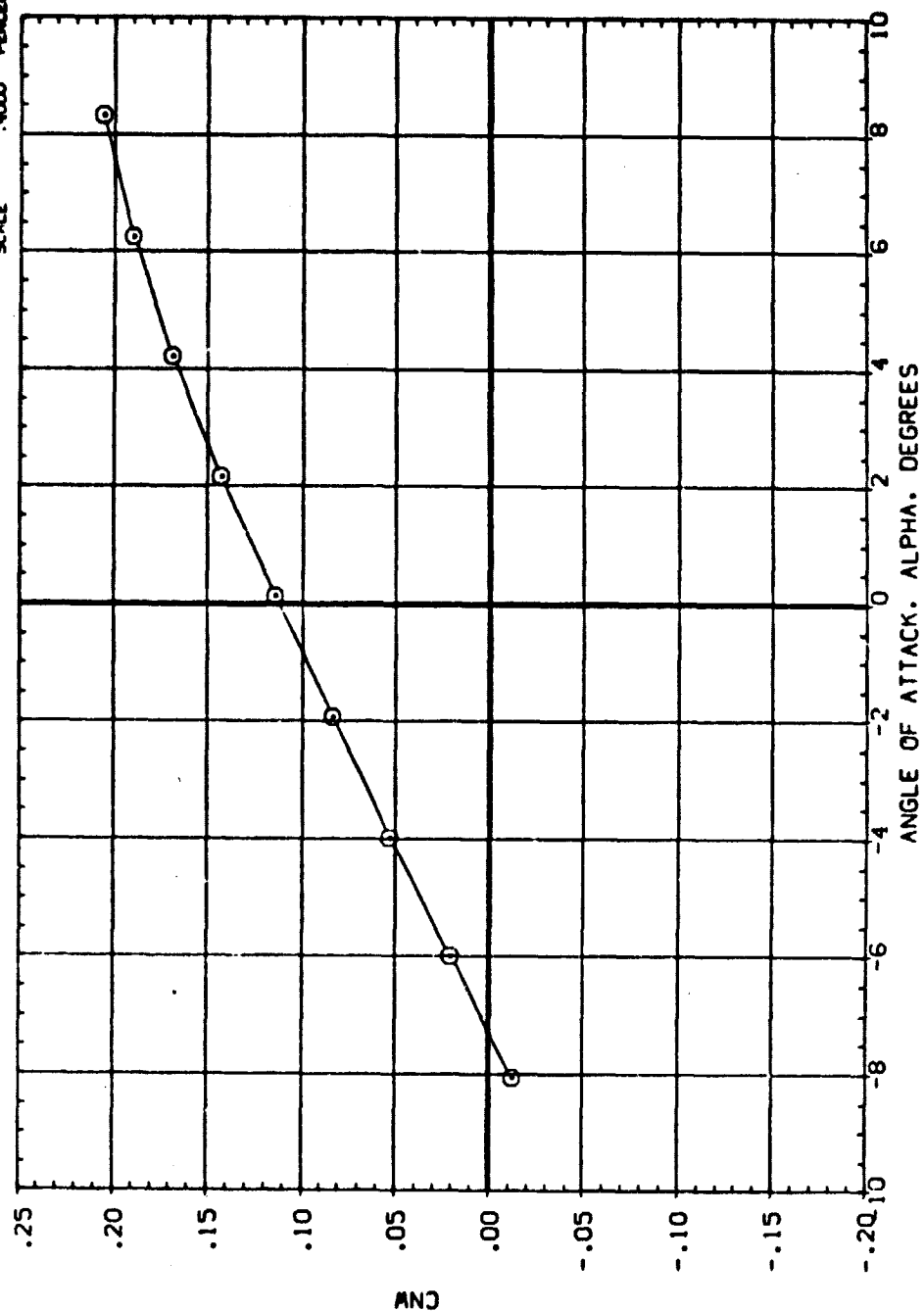


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.10

DATA SET SYMBOL: FA28. MSFC TWT 656. CONFIG. 02VZ2PAPATT353
 (FA2858) DATA NOT AVAILABLE
 (FA2864)

REFERENCE INFORMATION
 SREF 6.1580 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 XREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
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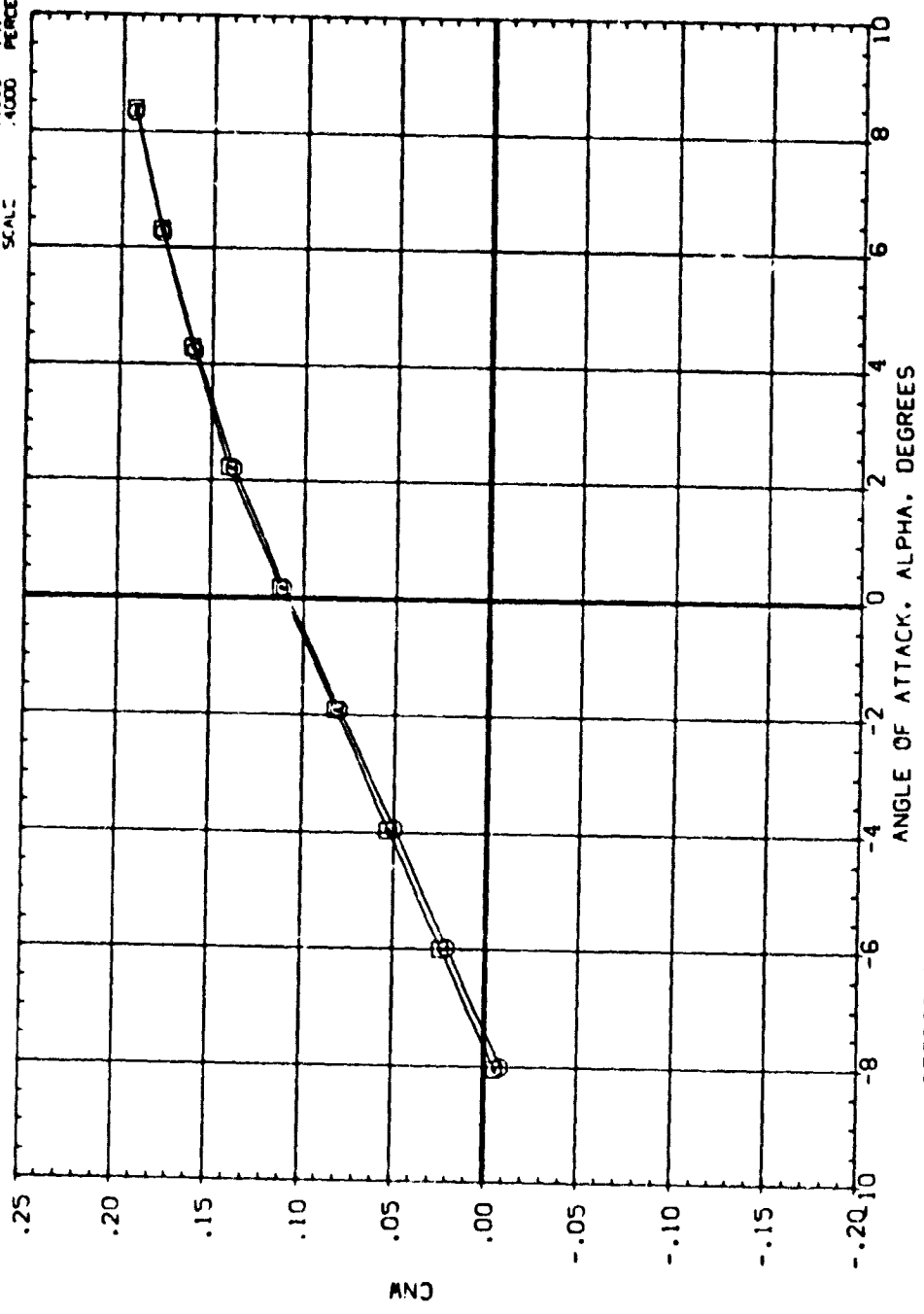


EFFECT OF REYNOLDS NUMBER

(F)MACH = 1.15

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2058) (FA2064) (FA2058) (FA2064) (FA2058) (FA2064) (FA2058) (FA2064)
 FA2058: MSC TWT 656: CONF 10: 02N2E20-PAAT1353
 FA2064: MSC TWT 656: CONF 10: 02N2E20-PAAT1353

REFERENCE INFORMATION
 SREF 5.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

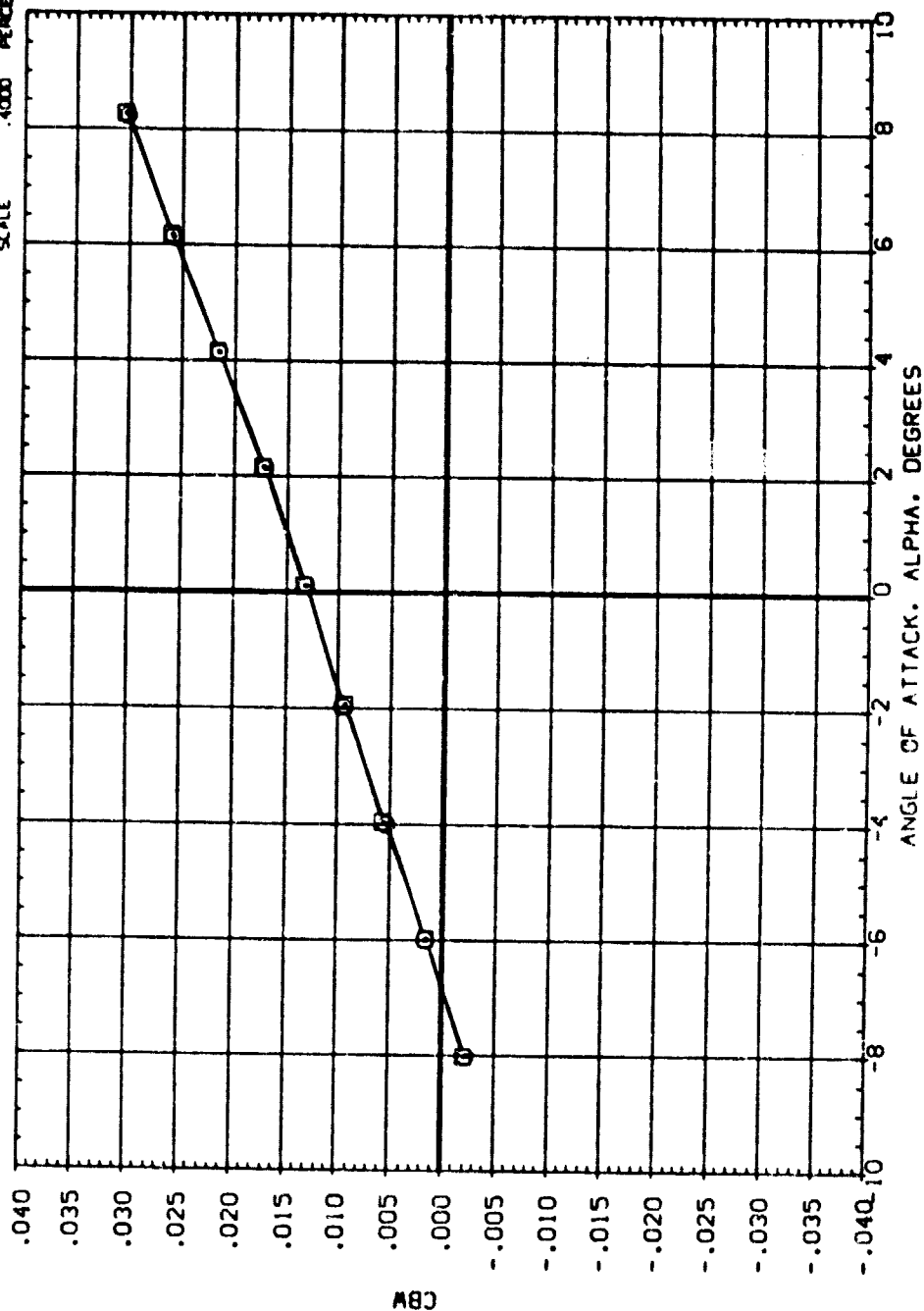


EFFECT OF REYNOLDS NUMBER

(G)MACH = 1.25

DATA SET SYMBOL: (FA2858) (FA2859) (FA2860) (FA2861) (FA2862) (FA2863) (FA2864) (FA2865) (FA2866) (FA2867) (FA2868) (FA2869) (FA2870) (FA2871) (FA2872) (FA2873) (FA2874) (FA2875) (FA2876) (FA2877) (FA2878) (FA2879) (FA2880) (FA2881) (FA2882) (FA2883) (FA2884) (FA2885) (FA2886) (FA2887) (FA2888) (FA2889) (FA2890) (FA2891) (FA2892) (FA2893) (FA2894) (FA2895) (FA2896) (FA2897) (FA2898) (FA2899) (FA2900) (FA2901) (FA2902) (FA2903) (FA2904) (FA2905) (FA2906) (FA2907) (FA2908) (FA2909) (FA2910) (FA2911) (FA2912) (FA2913) (FA2914) (FA2915) (FA2916) (FA2917) (FA2918) (FA2919) (FA2920) (FA2921) (FA2922) (FA2923) (FA2924) (FA2925) (FA2926) (FA2927) (FA2928) (FA2929) (FA2930) (FA2931) (FA2932) (FA2933) (FA2934) (FA2935) (FA2936) (FA2937) (FA2938) (FA2939) (FA2940) (FA2941) (FA2942) (FA2943) (FA2944) (FA2945) (FA2946) (FA2947) (FA2948) (FA2949) (FA2950) (FA2951) (FA2952) (FA2953) (FA2954) (FA2955) (FA2956) (FA2957) (FA2958) (FA2959) (FA2960) (FA2961) (FA2962) (FA2963) (FA2964) (FA2965) (FA2966) (FA2967) (FA2968) (FA2969) (FA2970) (FA2971) (FA2972) (FA2973) (FA2974) (FA2975) (FA2976) (FA2977) (FA2978) (FA2979) (FA2980) (FA2981) (FA2982) (FA2983) (FA2984) (FA2985) (FA2986) (FA2987) (FA2988) (FA2989) (FA2990) (FA2991) (FA2992) (FA2993) (FA2994) (FA2995) (FA2996) (FA2997) (FA2998) (FA2999) (FA3000)

REFERENCE INFORMATION
 SREF 6.1980 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 TREF 2.7120 IN
 YREF 0.0000 IN
 ZREF 0.0000 IN
 SCALE .4000 PERCENT

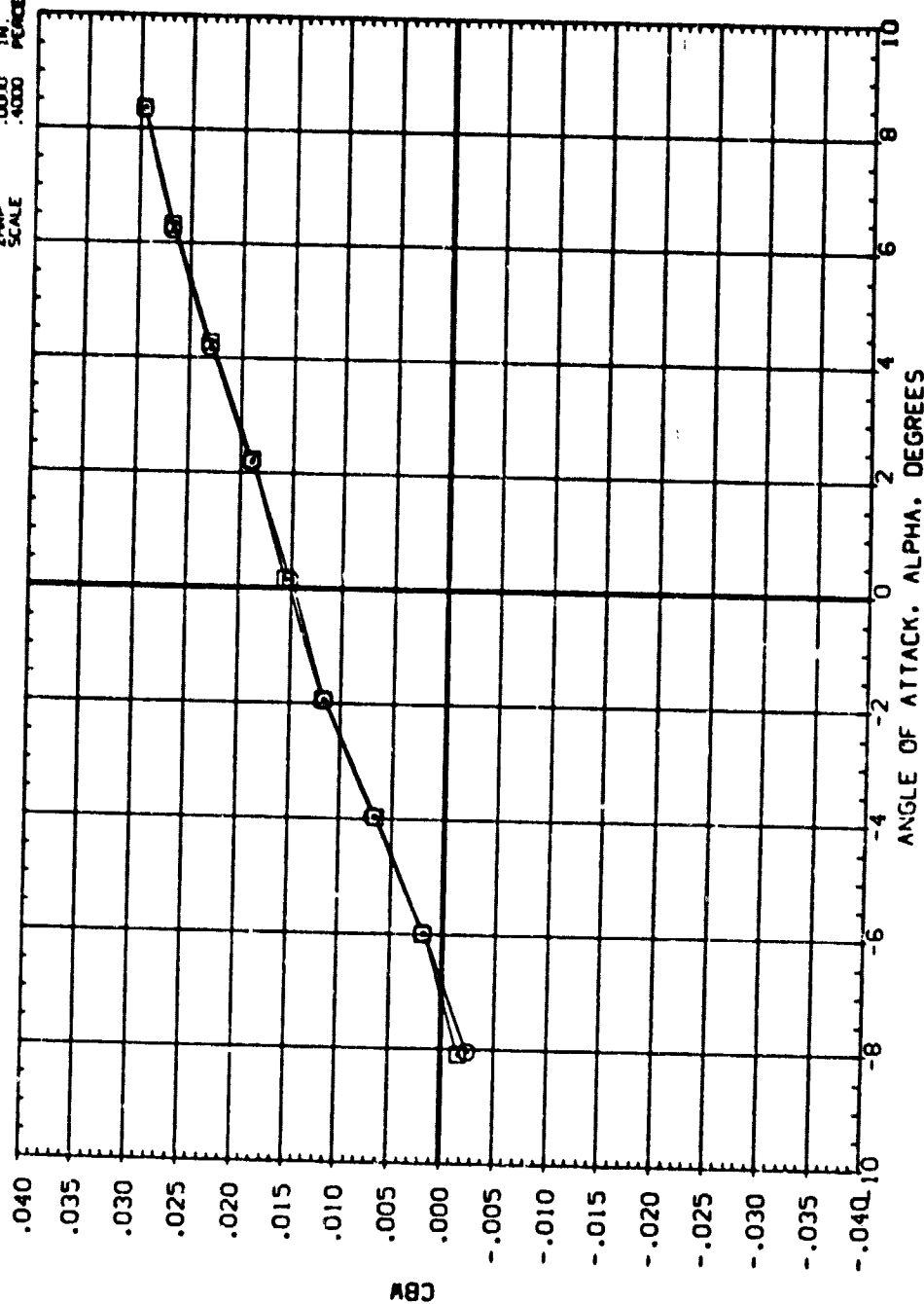


EFFECT OF REYNOLDS NUMBER

(M)MACH = .60

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2884) (FA2884) FA28. MSC TVT 656. CONF 1G. QZVZ 200PAAT133
 (FA2884) (FA2884) FA28. MSC TVT 656. CONF 1G. QZVZ 200PAAT133

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 TREF 2.7120 IN.
 ZREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

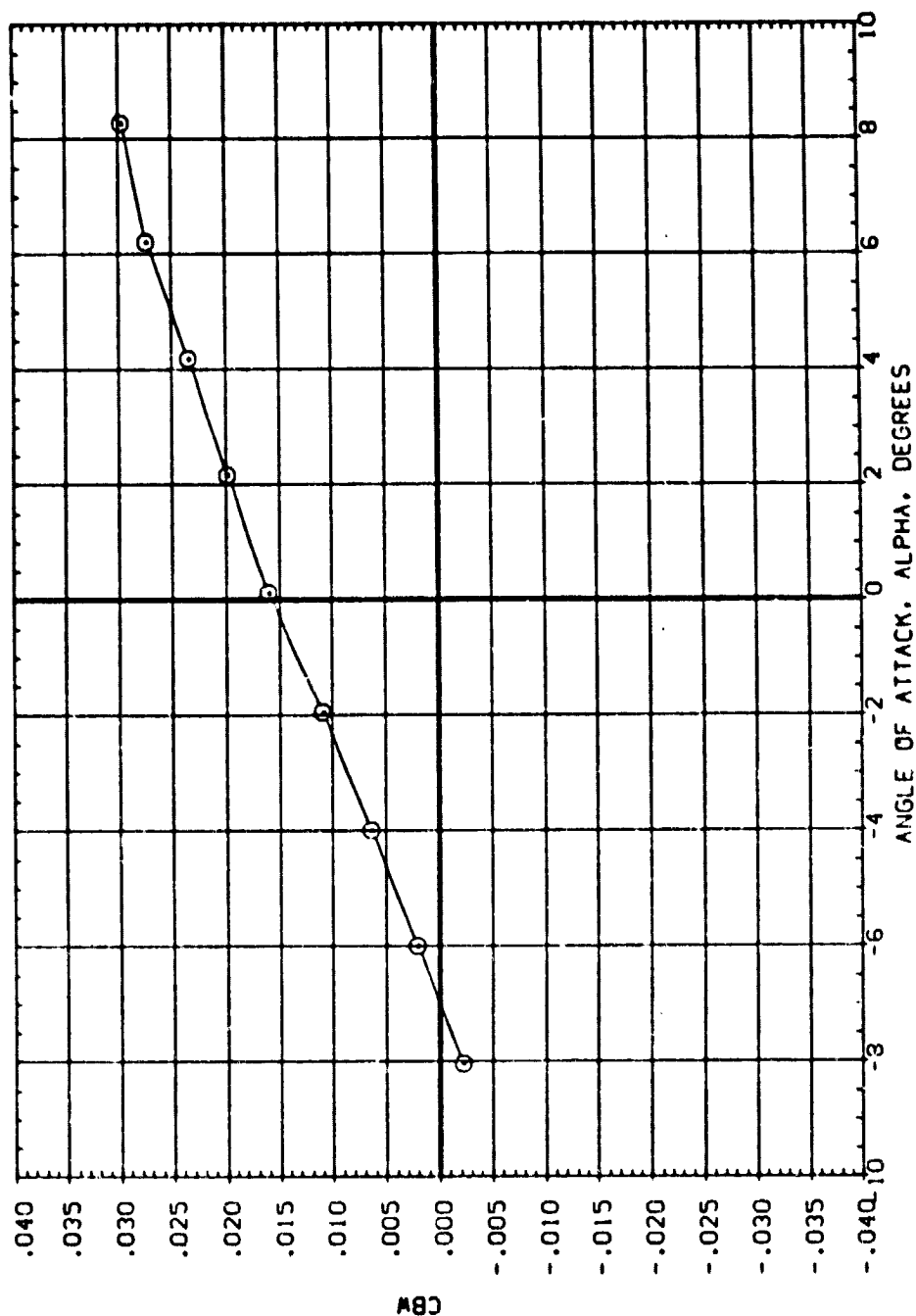


EFFECT OF REYNOLDS NUMBER

(B)MACH = .50

DATA SET SYMBOL: FA28. MS/C. TUT. 856. CONF. G. 02VZEPAAAT7353
 (FA2858) □ (FA2864) □ DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 5.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

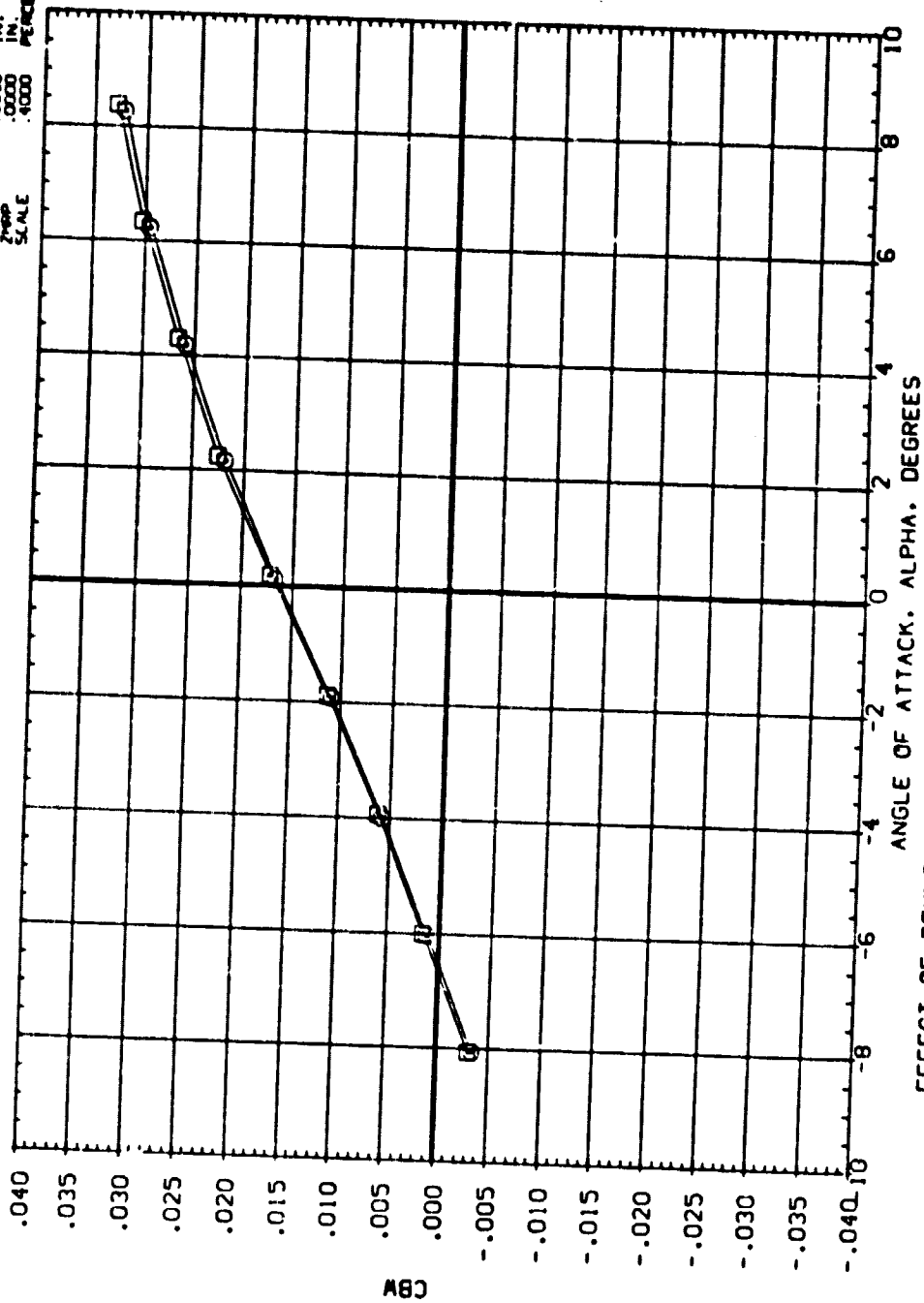


EFFECT OF REYNOLDS NUMBER

(C)MACH = .95

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28, MSFC TOT 656, CNF 16, 02/ZE 30/PAATT353
 FA28, MSFC TOT 656, CNF 16, 02/ZE 30/PAATT353

REFERENCE INFORMATION
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 LREF 3.1612 IN.
 BREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE 4000 PERCENT

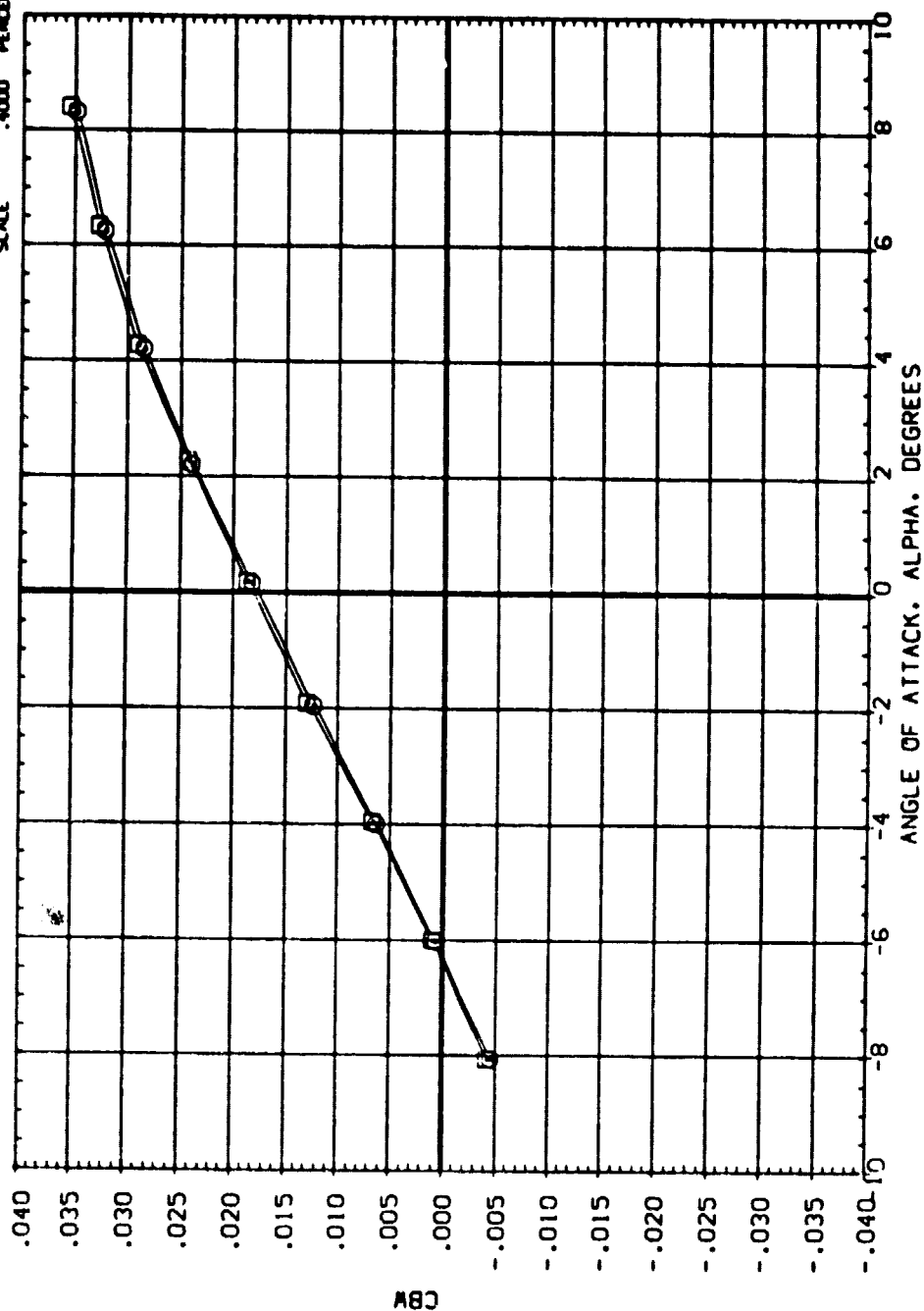


EFFECT OF REYNOLDS NUMBER

(0)MACH = 1.05

DATA SET SYMBOL CONFIGURATION INFORMATION
 (FA2858) □ FA28. MSFC TWT 656. CONF. 10. SIZE 200PAATT353
 (FA2864) □ FA28. MSFC TWT 656. CONF. 10. SIZE 200PAATT353

REFERENCE INFORMATION
 SRET 8.1800 90. IN
 WREF 3.1612 IN.
 BREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

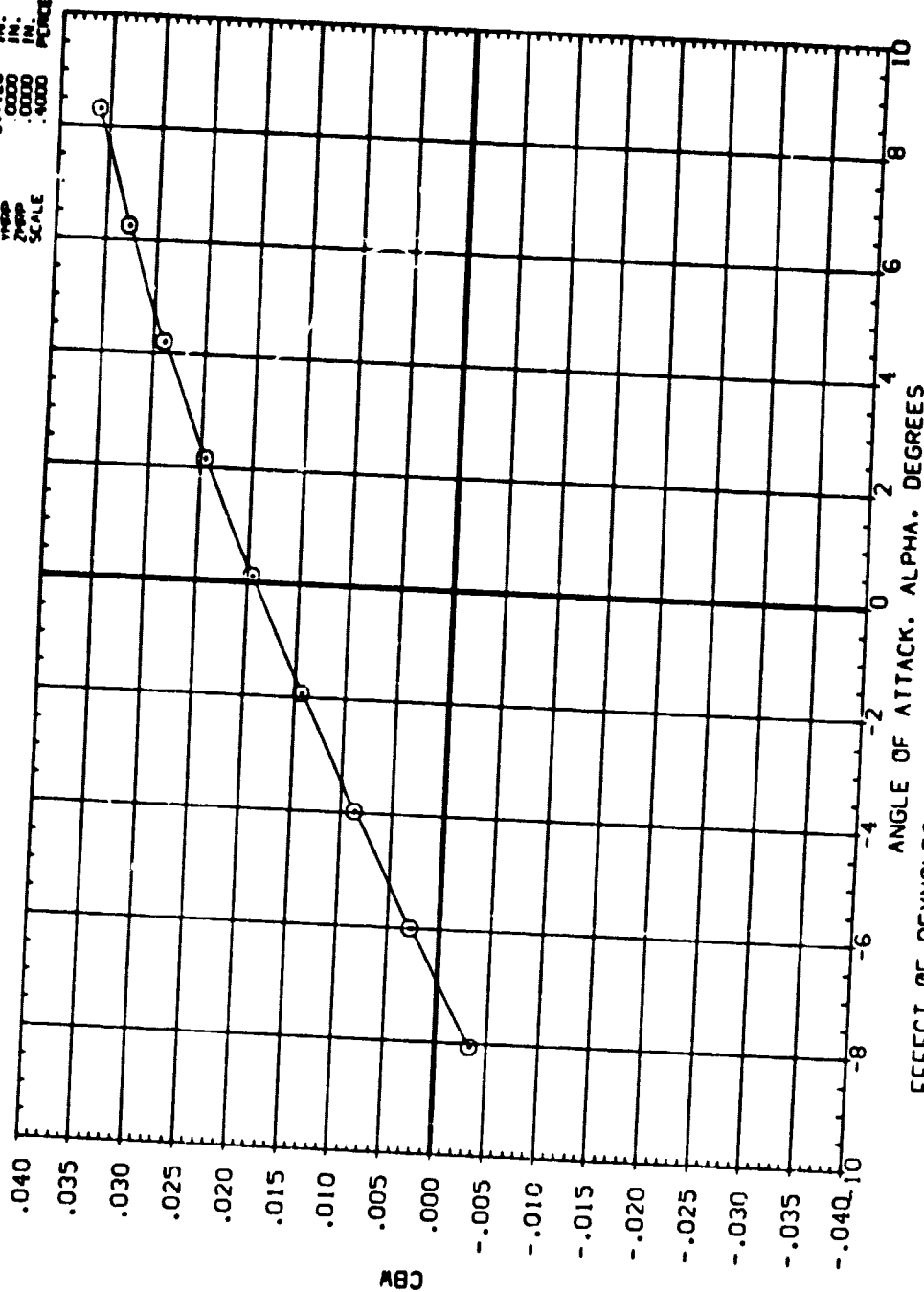


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.10

DATA SET SYMBOL: FA28. MSC TWT 656. CONFIG. CONVEZPAA17353
 (FA2858) DATA NOT AVAILABLE

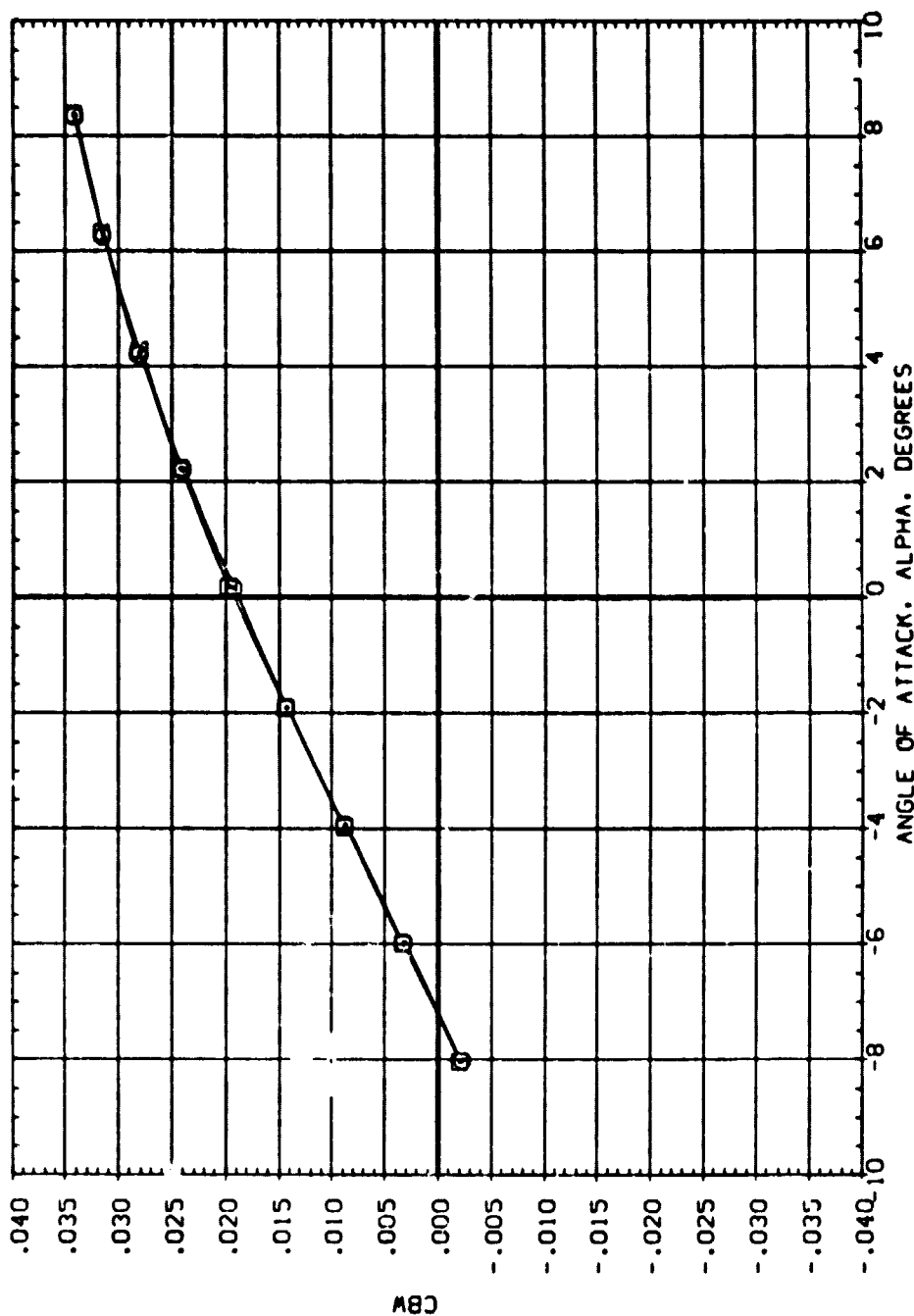
REFERENCE INFORMATION
 SREF 6.1580 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 PPROP 2.7120 IN
 TPROP .0000 IN
 SCALE .4000 PERCENT



EFFECT OF REYNOLDS NUMBER
 (F)MACH = 1.15

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2859) □ FA28: MSFC TWT 656: CONF IG: 02VZ2PMPA11353
 (FA2864) □ FA28: MSFC TWT 656: CONF IG: 02VZ2PMPA11353

REFERENCE INFORMATION
 SREF 5.1980 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

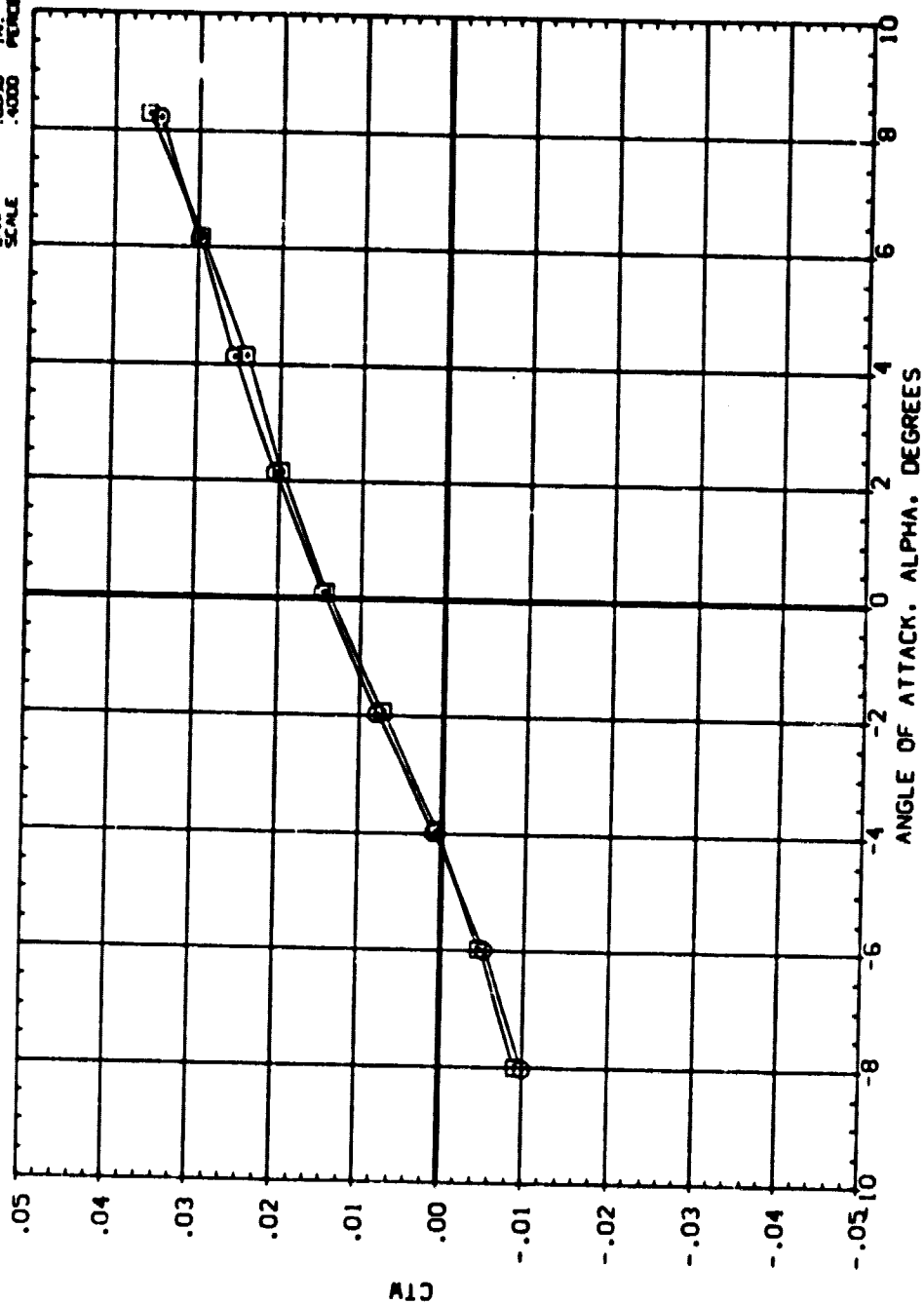


EFFECT OF REYNOLDS NUMBER

(G)MACH = 1.25

DATA SET SYMBOL: B
 CONFIGURATION DESCRIPTION: FA28. MSC TWT 656. CONF 10. QNZE2PMAATT353
 FA28. MSC TWT 656. CONF 10. QNZE2PMAATT353

REFERENCE INFORMATION
 SREF 5.1280 50. IN
 LREF 5.1512 50. IN
 SPREF 2.7470 50. IN
 SPREF 2.7120 50. IN
 YREF .0000 50. IN
 ZREF .0000 50. IN
 SCALE .4000 PERCENT



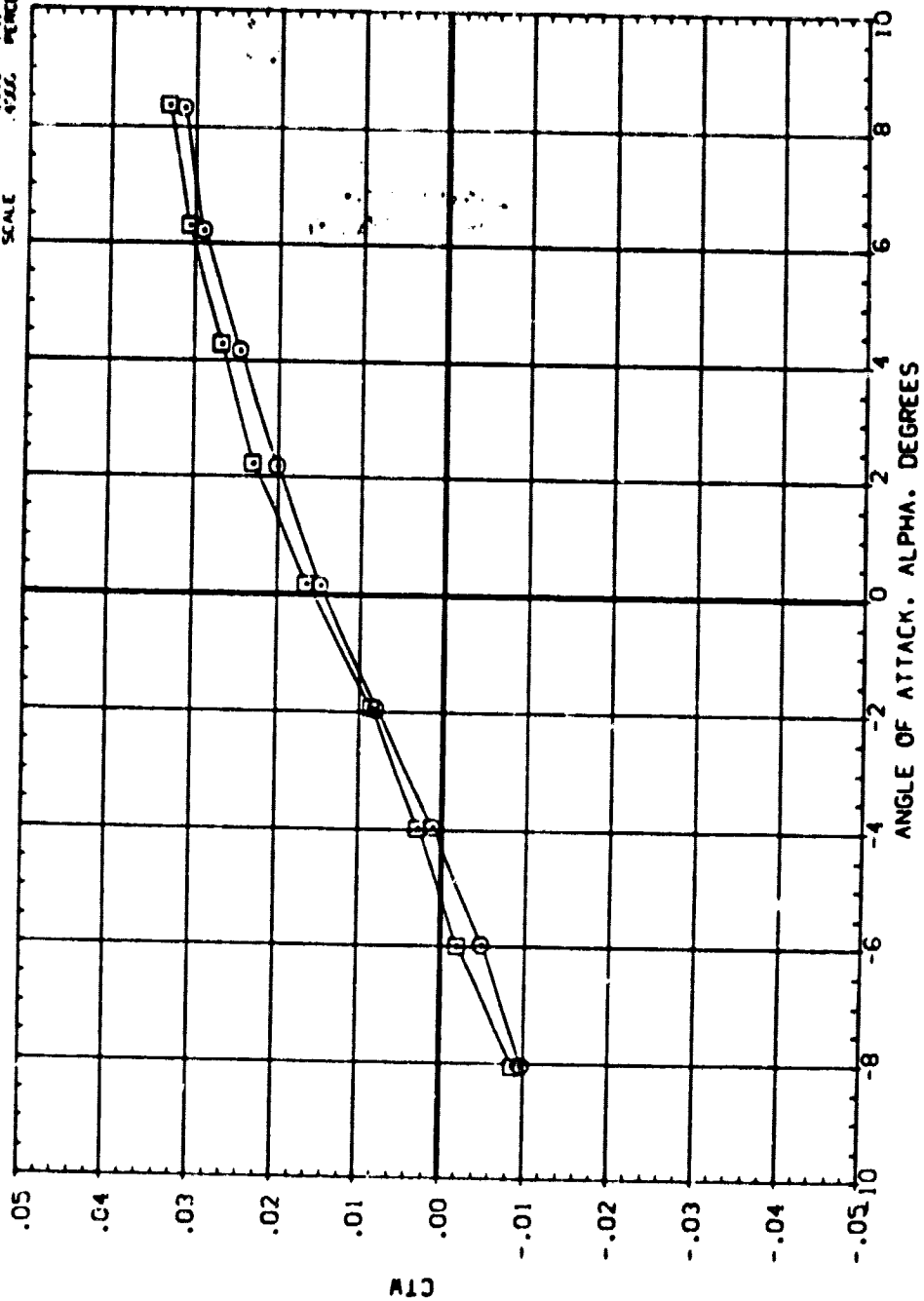
EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

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DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA28B) □ FA28, MSC TVT 656, CONFIG. 02VZ200AA11353
 (FA28B4) □ FA28, MSC TVT 656, CONFIG. 02VZ200AA11353

REFERENCE INFORMATION
 SREF 8.1580 50.14
 LREF 3.1612 14
 MREF 2.7475 14
 WREF 2.7125 14
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 YREF 1.9811 14
 SCALE 0.222 PERCENT

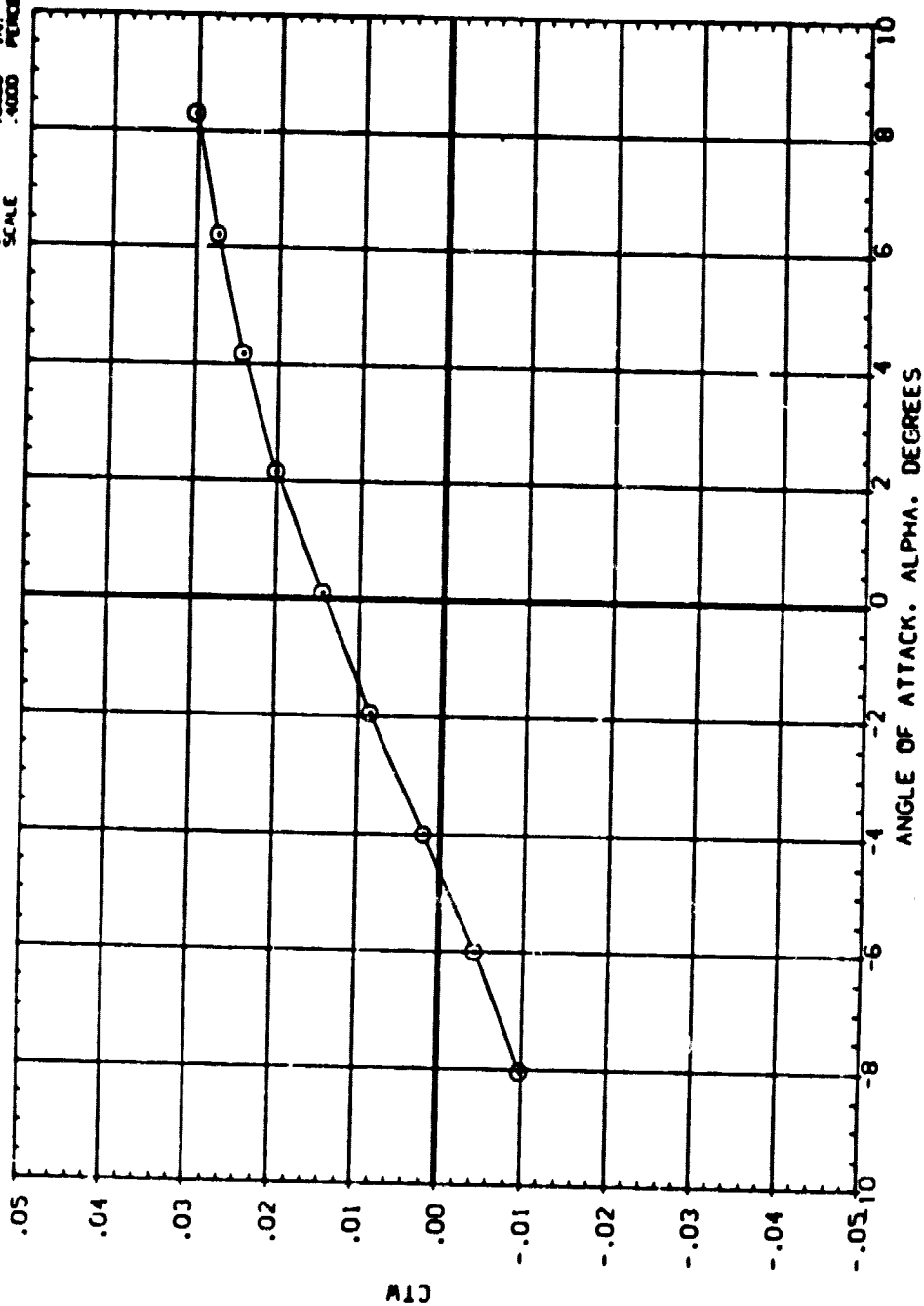


EFFECT OF REYNOLDS NUMBER

(B)MACH = .90

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2058) FA20. W5FC TWT 656. CONF IG. 02N2E20PAAT35J
 (FA2064) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 PREF .0000 IN.
 SCALE .4000 PERIOD

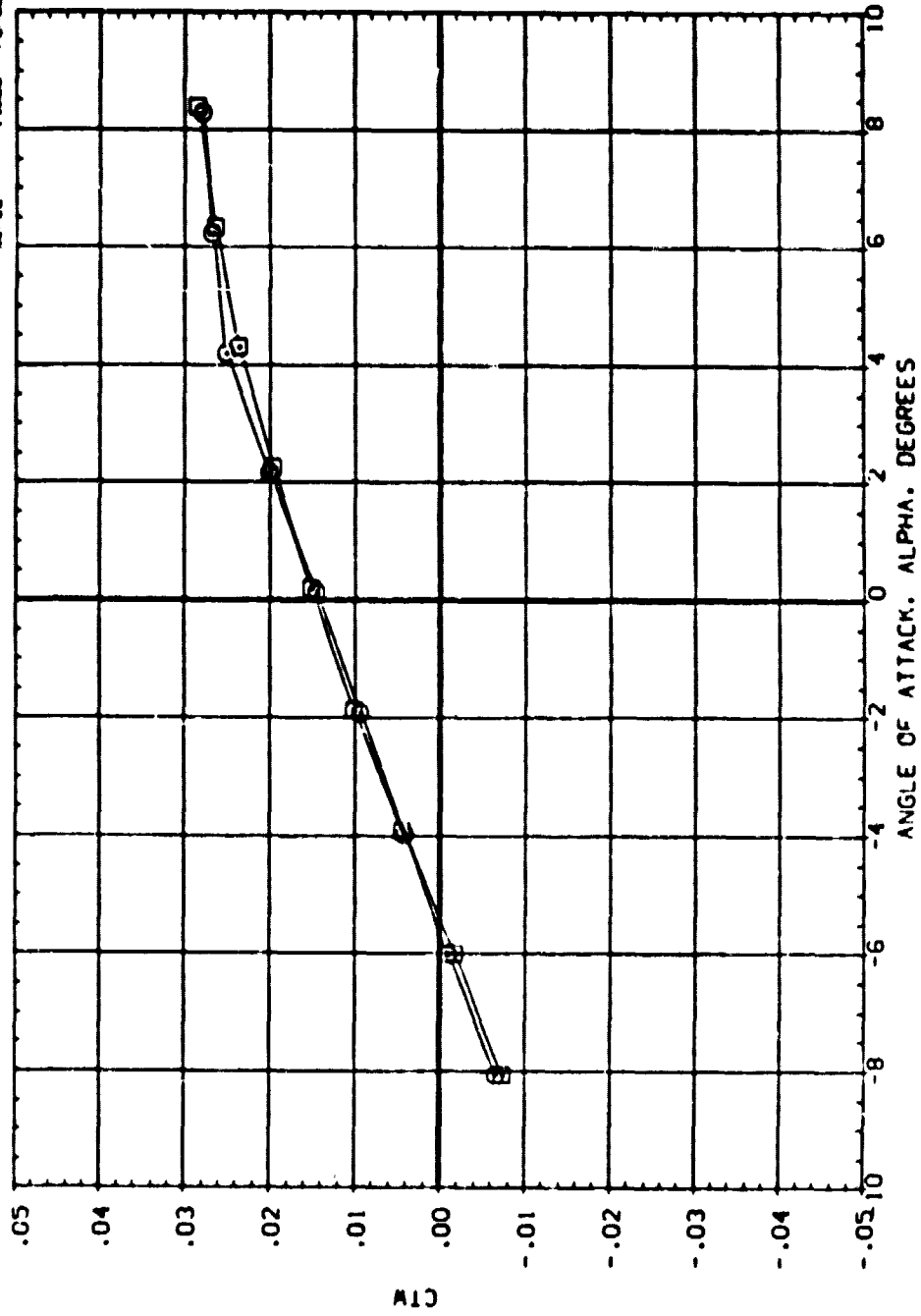


EFFECT OF REYNOLDS NUMBER

(C)MACH = .95

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2854) □ FA28. M5C 1VT 656. CONF 1G. C2N2E2M0PAAT1253
 (FA2854) □ FA28. M5C 1VT 656. CONF 1G. C2N2E2M0PAAT1253

REFERENCE INFORMATION
 SREF 6.1980 90. IN
 LREF 5.1612 IN.
 MREF 3.7470 IN.
 WREF 2.7120 IN.
 PREF .0000 IN.
 TREF .0000 IN.
 SCALE .0000 PERCENT

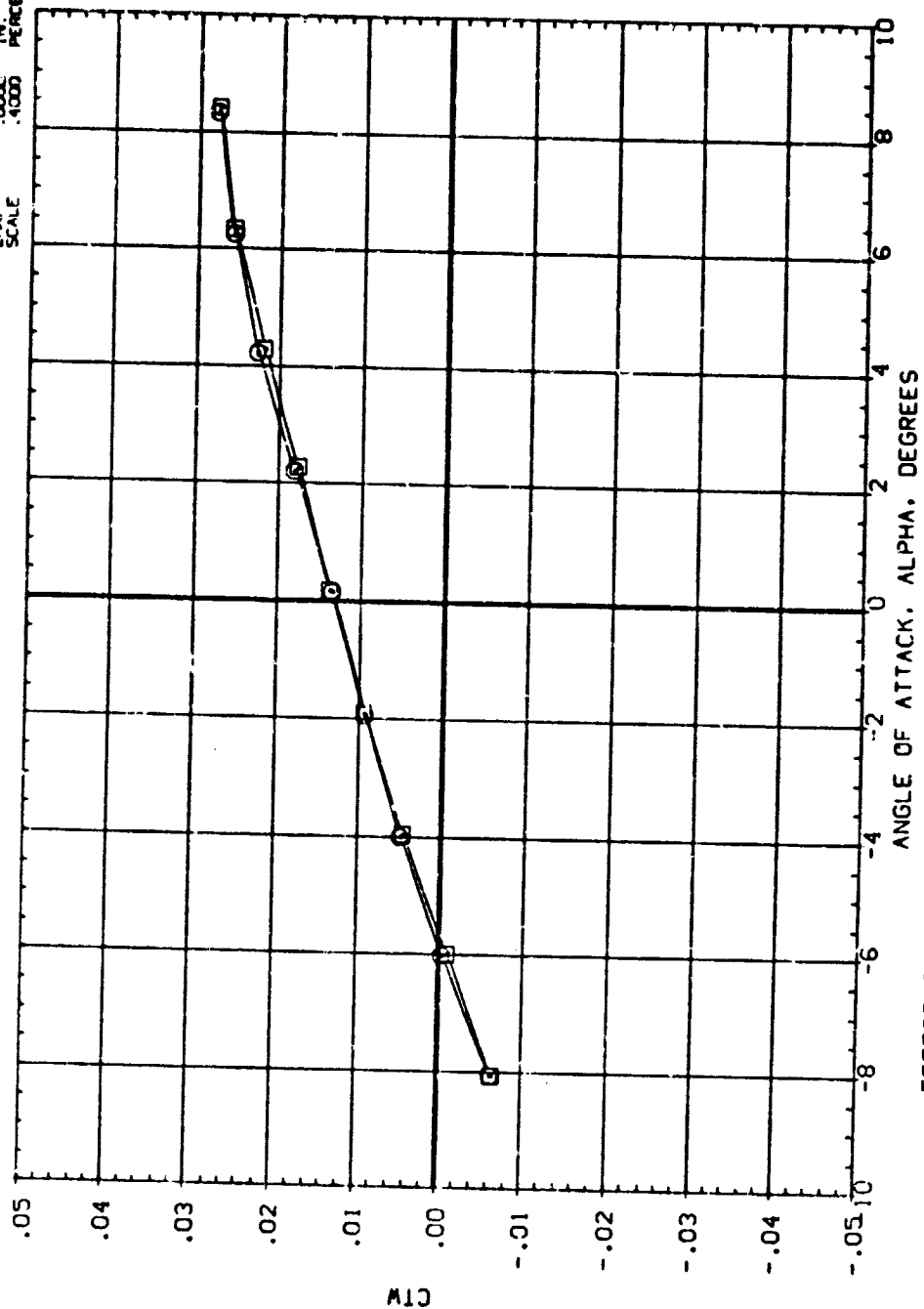


EFFECT OF REYNOLDS NUMBER

(O)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2859) □ FA28. MSEC 1WT 6.5%. CONF.IG. 02N2E20NPA11353
 (FA2864) □ FA28. MSEC 1WT 6.5%. CONF.IG. 02N2E20NPA11353

REFERENCE INFORMATION
 SPEC 6.1580 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

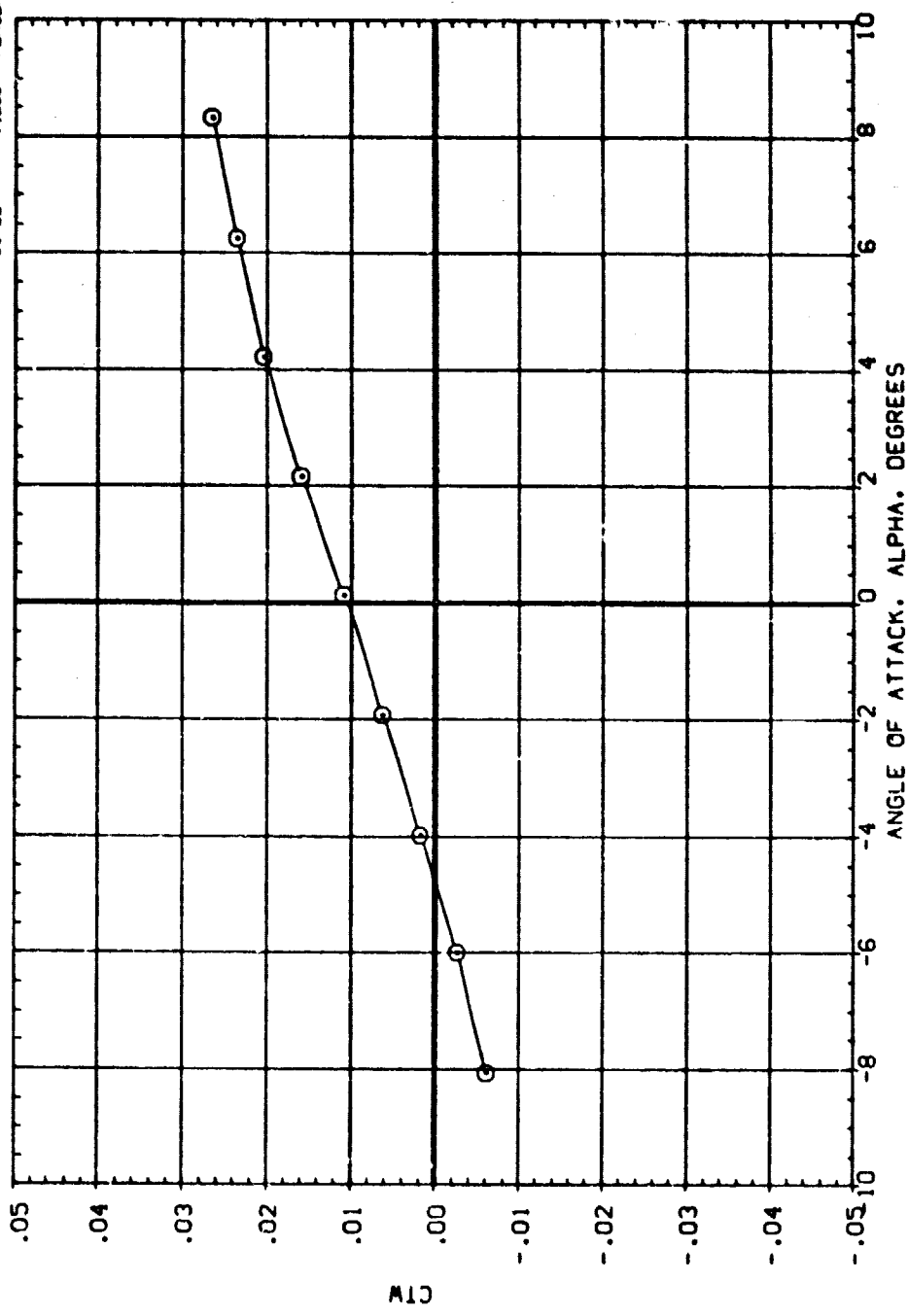


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.10

DATA SET SYMBOL: FA28. MSFC TVT 656. CONFIG. 0726200PAATT353
 (FA2864) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 8.1880 SQ. IN.
 VREF 2.1812 IN.
 SREF 2.7172 IN.
 VREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

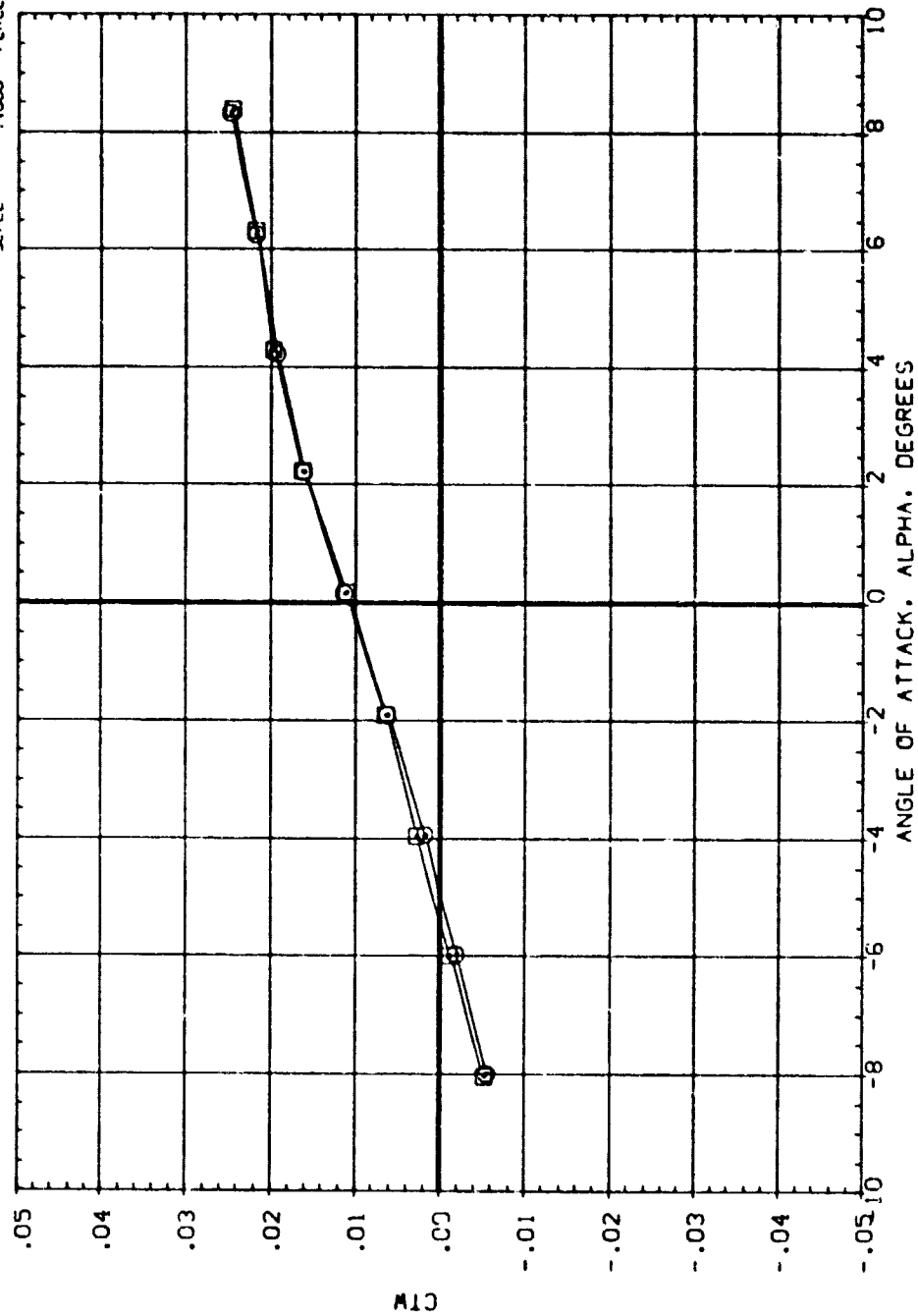


EFFECT OF REYNOLDS NUMBER

(F)MACH = 1.15

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2859) □ FA28. M5C TVT 656. CONF IG. 02VZE2M4PAAT1353
 (FA2864) □ FA28. M5C TVT 656. CONF IG. 02VZE2M4PAAT1353

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BRLEF 3.7470 IN.
 XPROP 2.7120 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

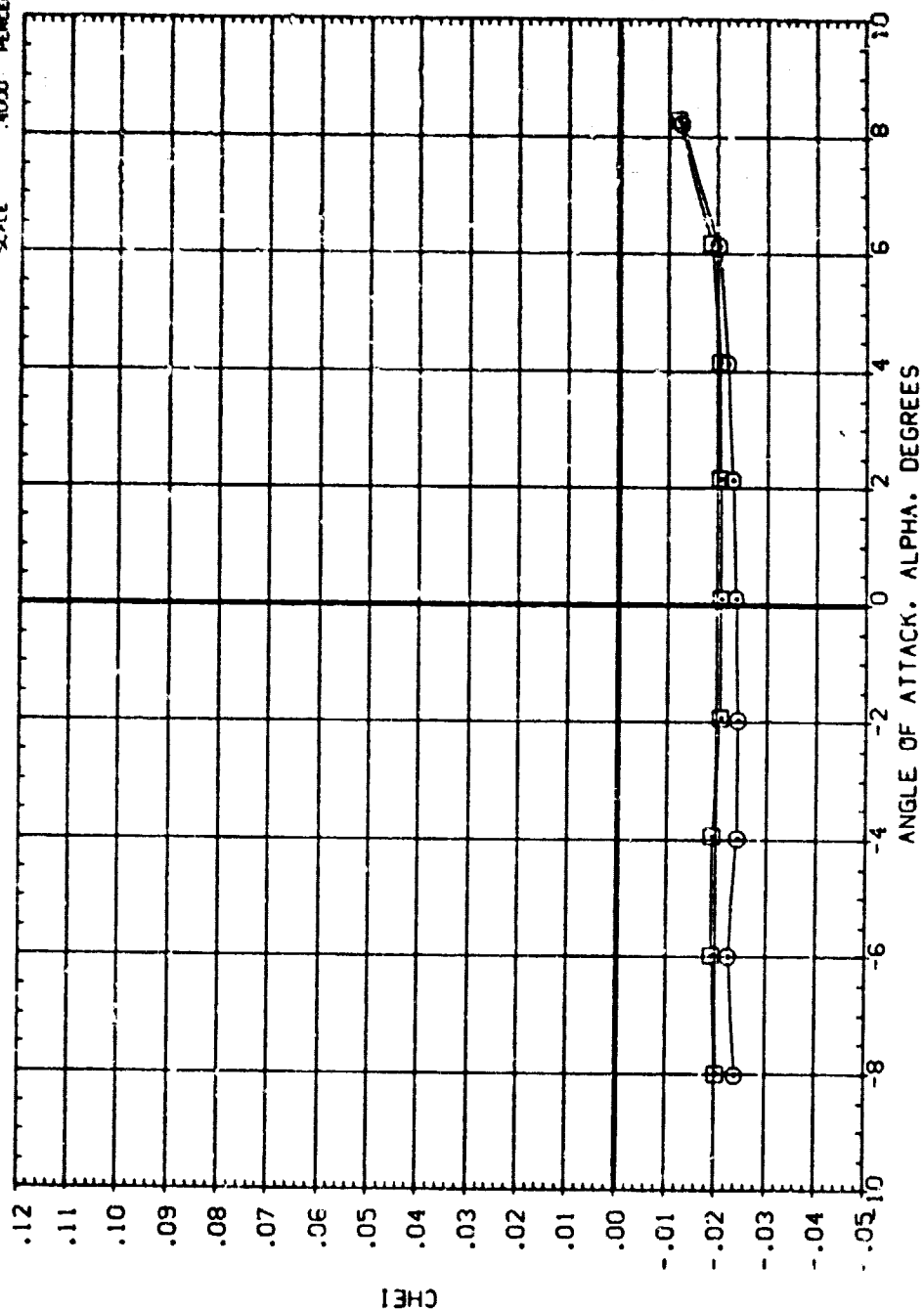


EFFECT OF REYNOLDS NUMBER

(G)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) □ FA28. MSFC TVT 65A. CONF 1G. 02NZE28PAAT1353
 (FA2864) □ FA28. MSFC TVT 65B. CONF 1G. 02NZE28PAAT1353

REFERENCE INFORMATION
 WREF 6.1887 IN
 LREF 5.1612 IN
 BREF 2.7470 IN
 XREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

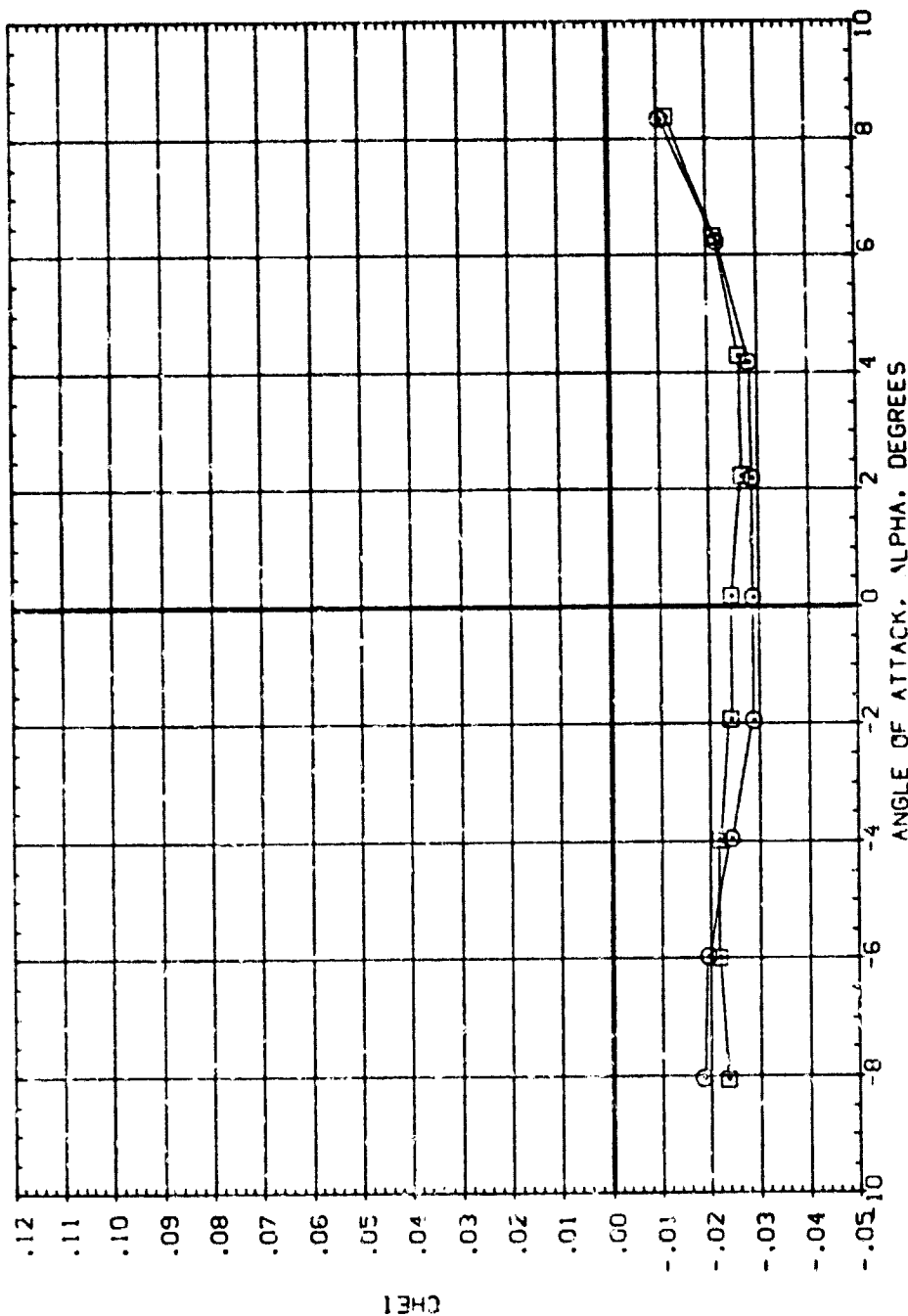


EFFECT OF REYNOLDS NUMBER

(M)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) □ FA28, MSC TVT 656, CONF 10, 02NZE ZNDPATT1353
 (FA2864) □ FA28, MSC TVT 656, CONF 10, 02NZE ZNDPATT1353

REFERENCE INFORMATION
 SPREF 6.1580 IN.
 LPREF 5.1612 IN.
 BPREF 3.7470 IN.
 XMPF 2.7120 IN.
 YMPF .0000 IN.
 ZMPF .0000 IN.
 SCALE .1000 PERCENT

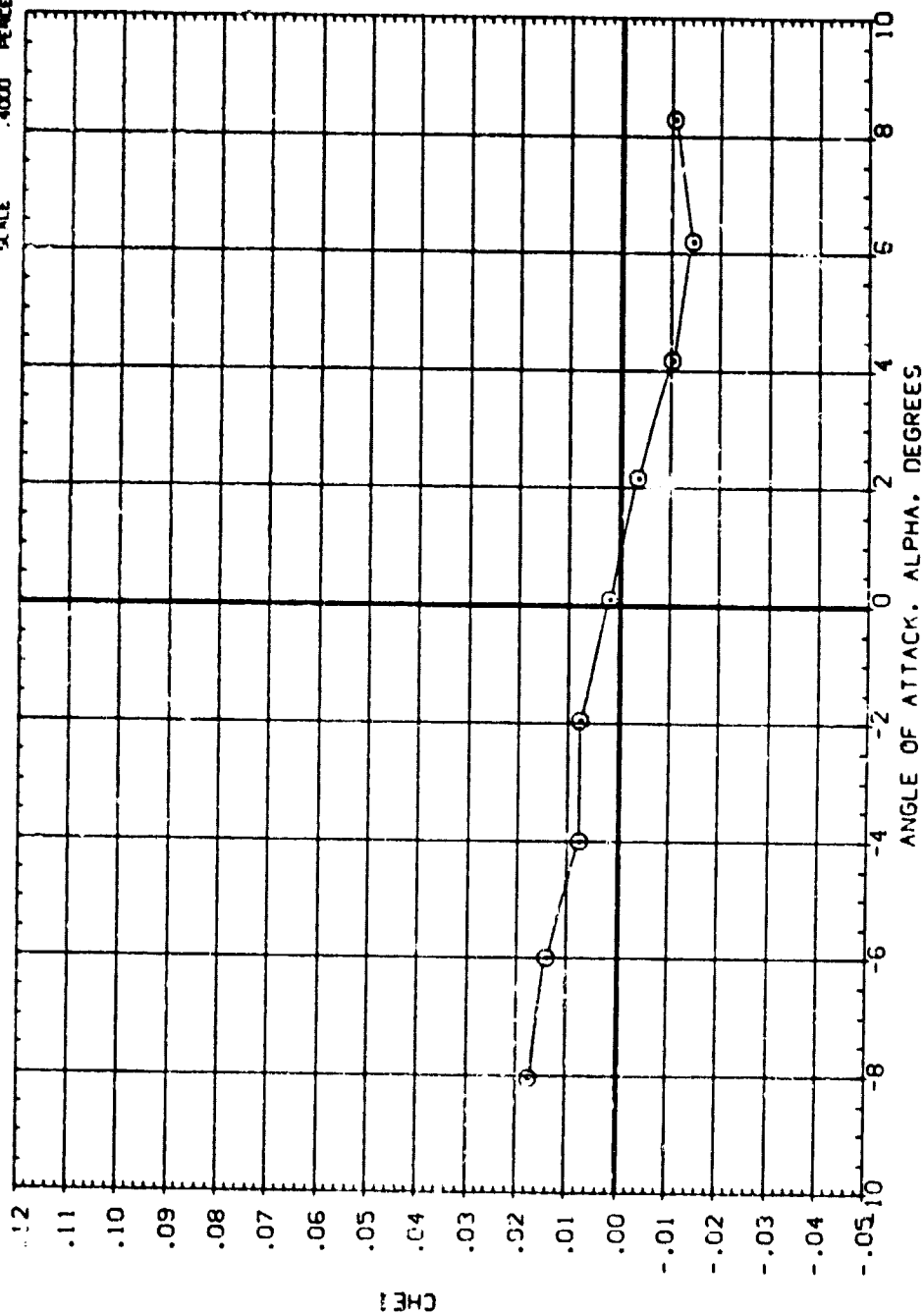


EFFECT OF REYNOLDS NUMBER

(B) MACH = .90

DATA SET SYMBOL: FA28-MSFC TWT 656- CONFIG. 02VZEP-PAATT353
 (FA2854) (FA2854) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 57. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

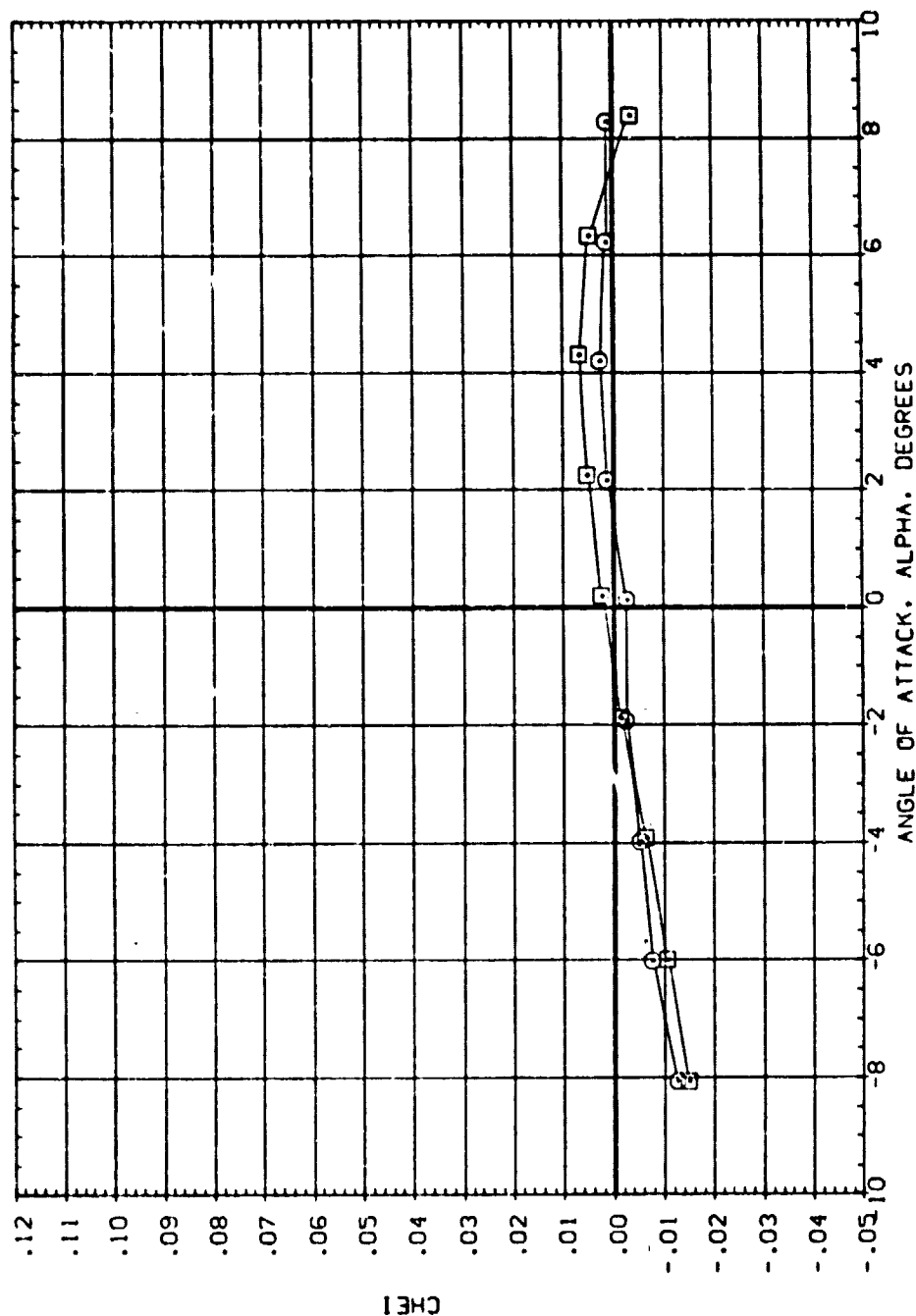


EFFECT OF REYNOLDS NUMBER

(C)MACH = .95

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) □ FA28. MSFC INT 656. CONF IG. 02N2E2NPAATT353
 (FA2864) □ FA28. MSFC INT 656. CONF IG. 02N2E2NPAATT353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 AREF 2.7120 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



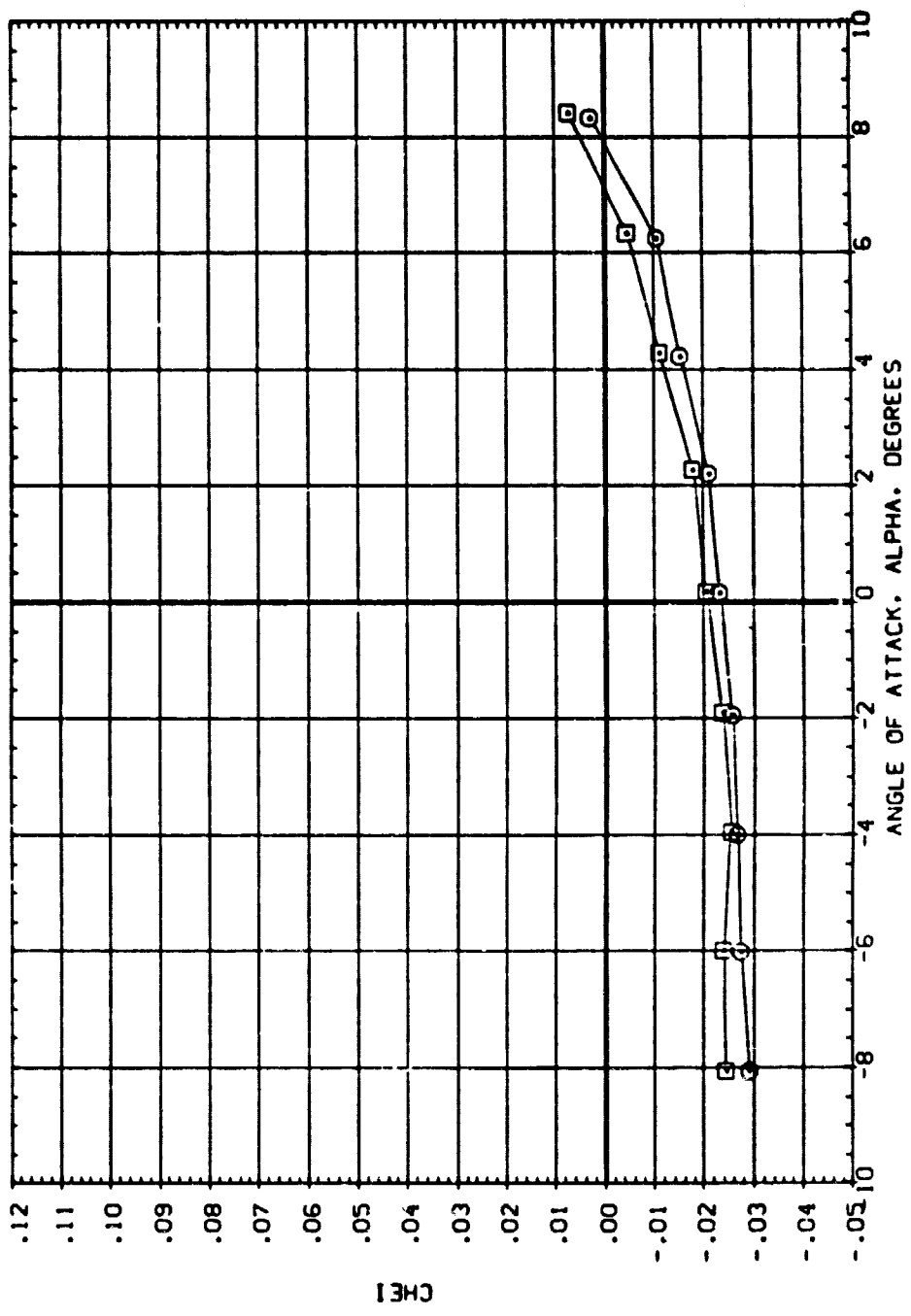
EFFECT OF REYNOLDS NUMBER

(D)MACH = 1.05

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DATA SET SYMBOL: 8
 (FA2858) (FA2864)
 CONFIGURATION DESCRIPTION:
 FA28: MSFC TWT 656, CONF IG: QZVZE2NPAAT153
 FA28: MSFC TWT 656, CONF IG: QZVZE2NPAAT153

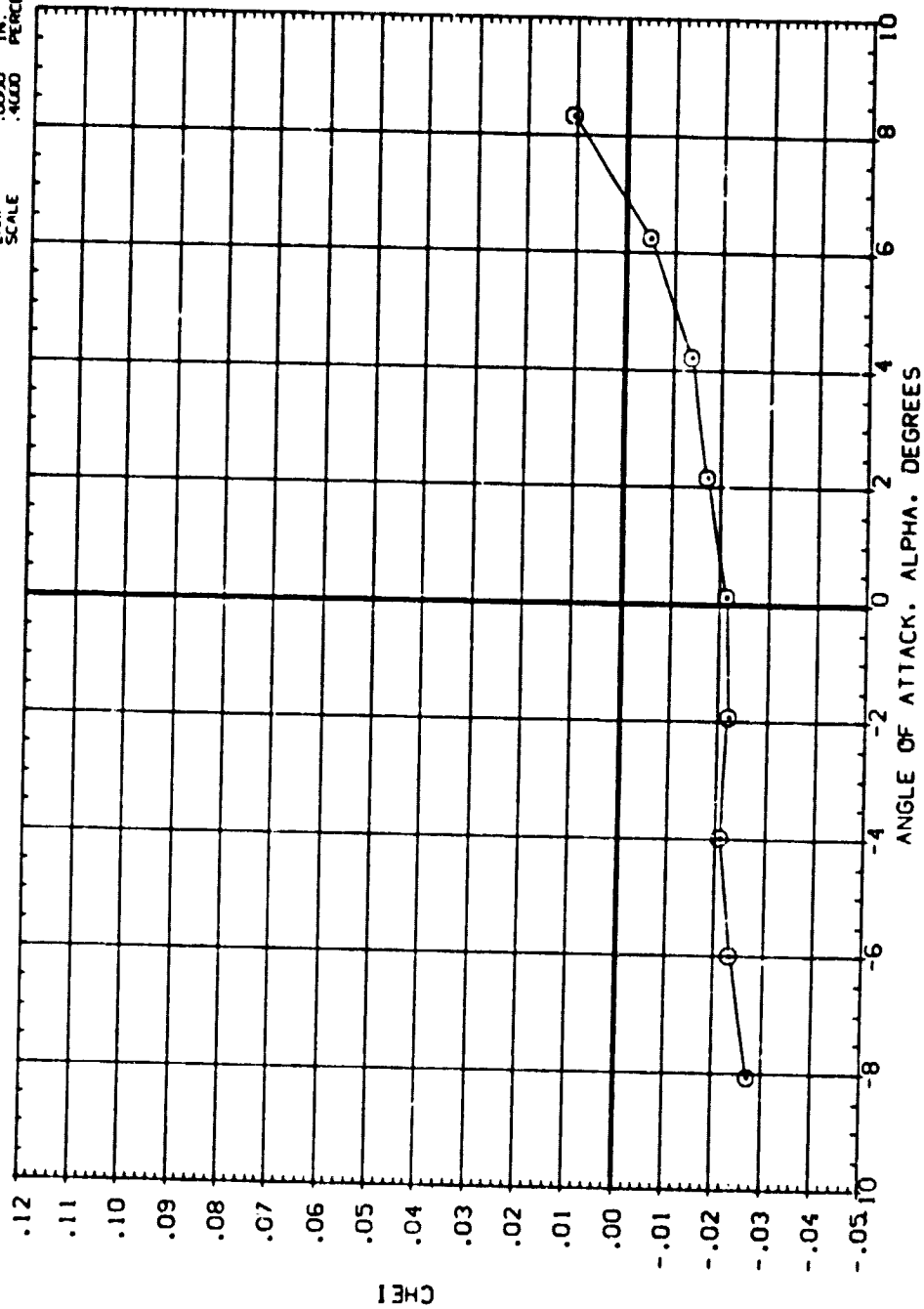
REFERENCE INFORMATION:
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 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 XPROP: 2.7120 IN.
 YPROP: .0000 IN.
 ZPROP: .0000 IN.
 SCALE: .4000 PERCENT



EFFECT OF REYNOLDS NUMBER
 (E)MACH = 1.10

DATA SET SYMBOL: **Q** CONFIGURATION DESCRIPTION: FA28, MSFC TWT 656, CONFIG. 02N2E2NPAATT353
 (FA2858) (FA285A) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

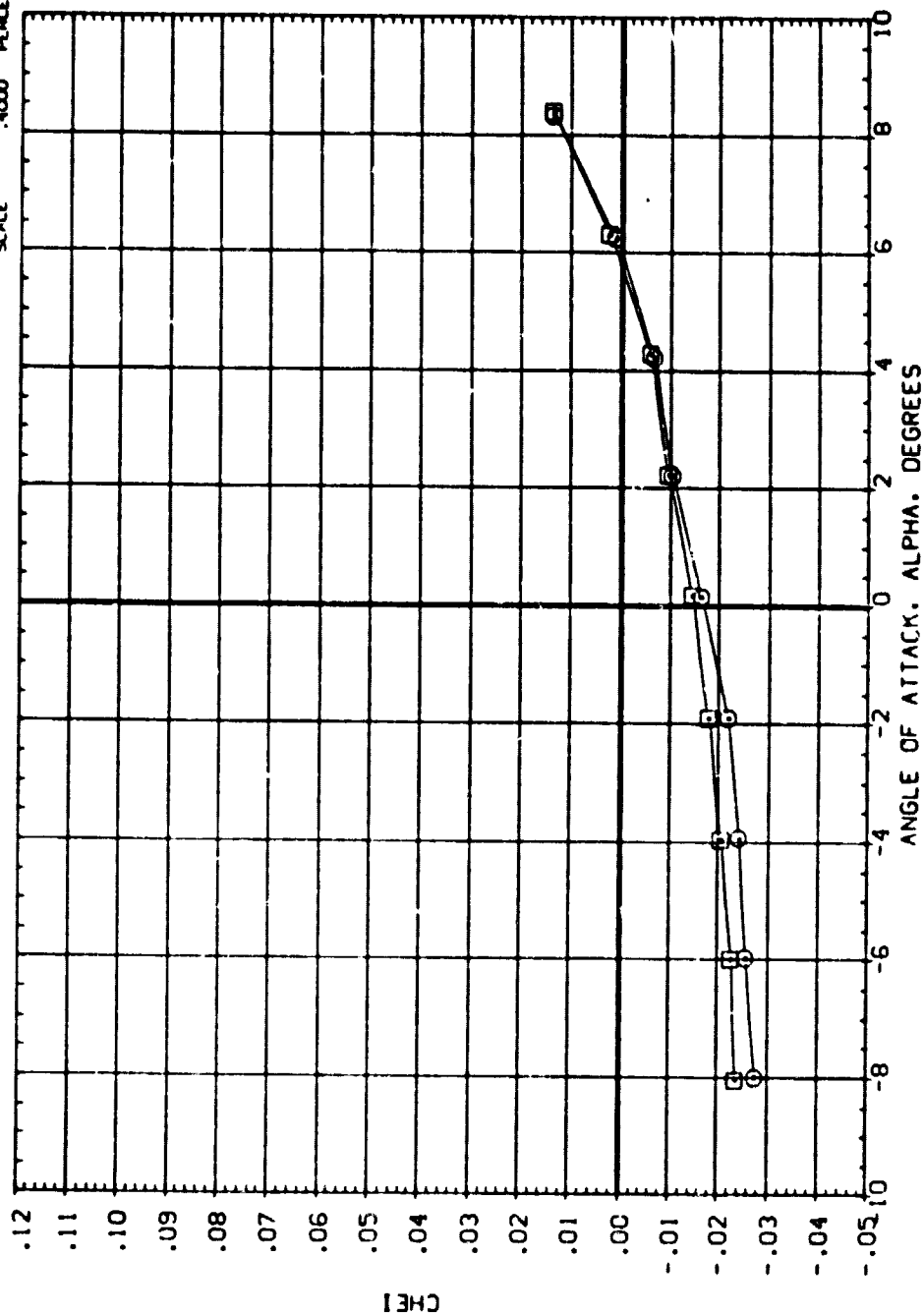


EFFECT OF REYNOLDS NUMBER

(F)MACH = 1.15

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA7864) □ FA28. MSFC TWT 656. CONF 10. 02NZE20NPAAT1353
 (FA7864) □ FA28. MSFC TWT 656. CONF 10. 02NZE20NPAAT1353

REFERENCE INFORMATION
 SREF 5.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

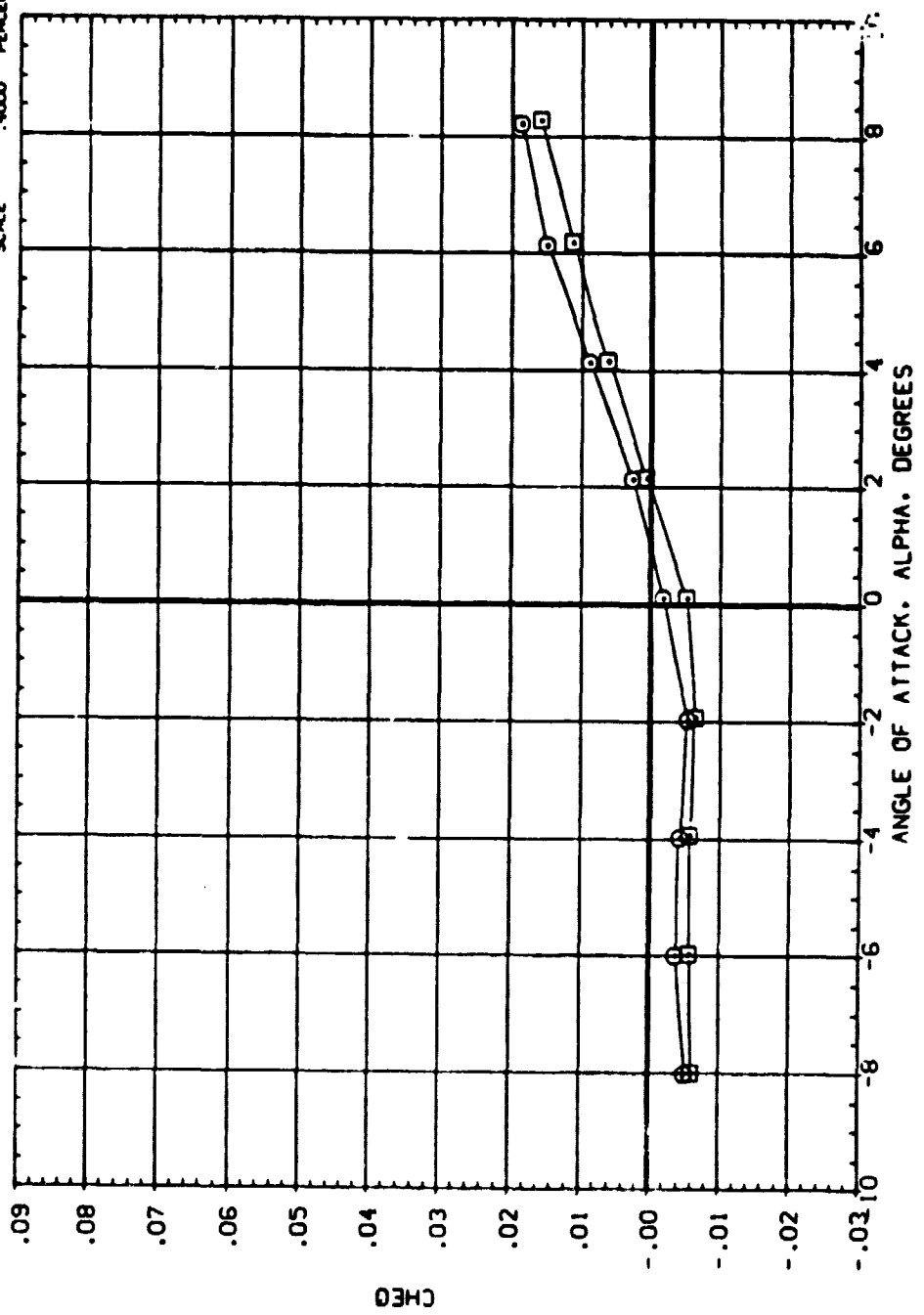


EFFECT OF REYNOLDS NUMBER

(G)MACH = 1.25

DATA SET SYMBOL: ☐ CONFIGURATION DESCRIPTION:
 (FA2858) FA28. M55C TWT 656. CONF IG. 02NZE2M0A1T1353
 (FA2864) FA28. M55C TWT 656. CONF IG. 02NZE2M0A1T1353

REFERENCE INFORMATION
 SREF 6.1580 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 VREF 2.7120 IN
 WREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

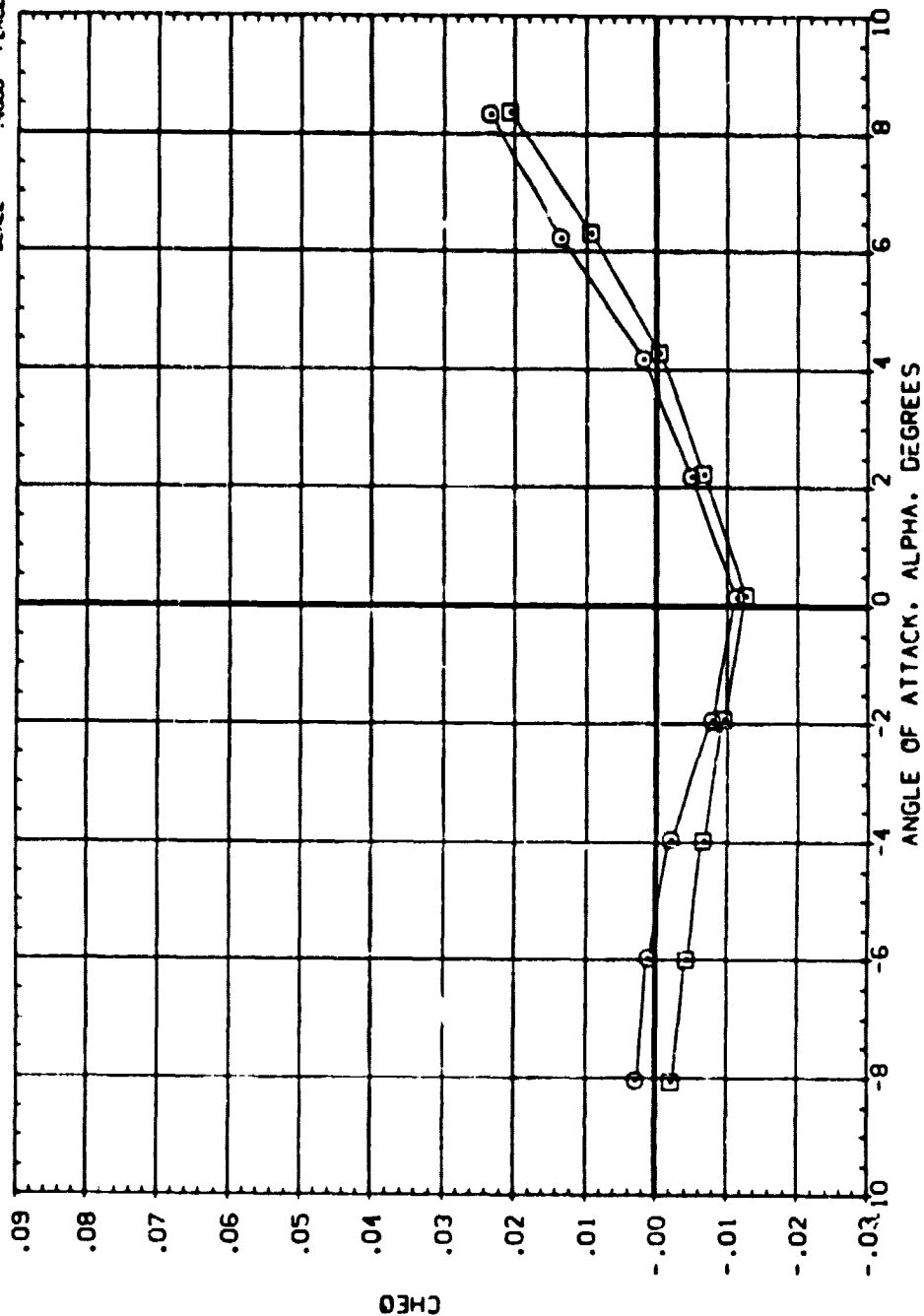


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2826) □ FA28. MSFC TWT 656. CONF 16. 02NZE2MPAAT1253
 (FA2864) □ FA28. MSFC TWT 656. CONF 16. 02NZE2MPAAT1253

REFERENCE INFORMATION
 SREF 6.1380 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

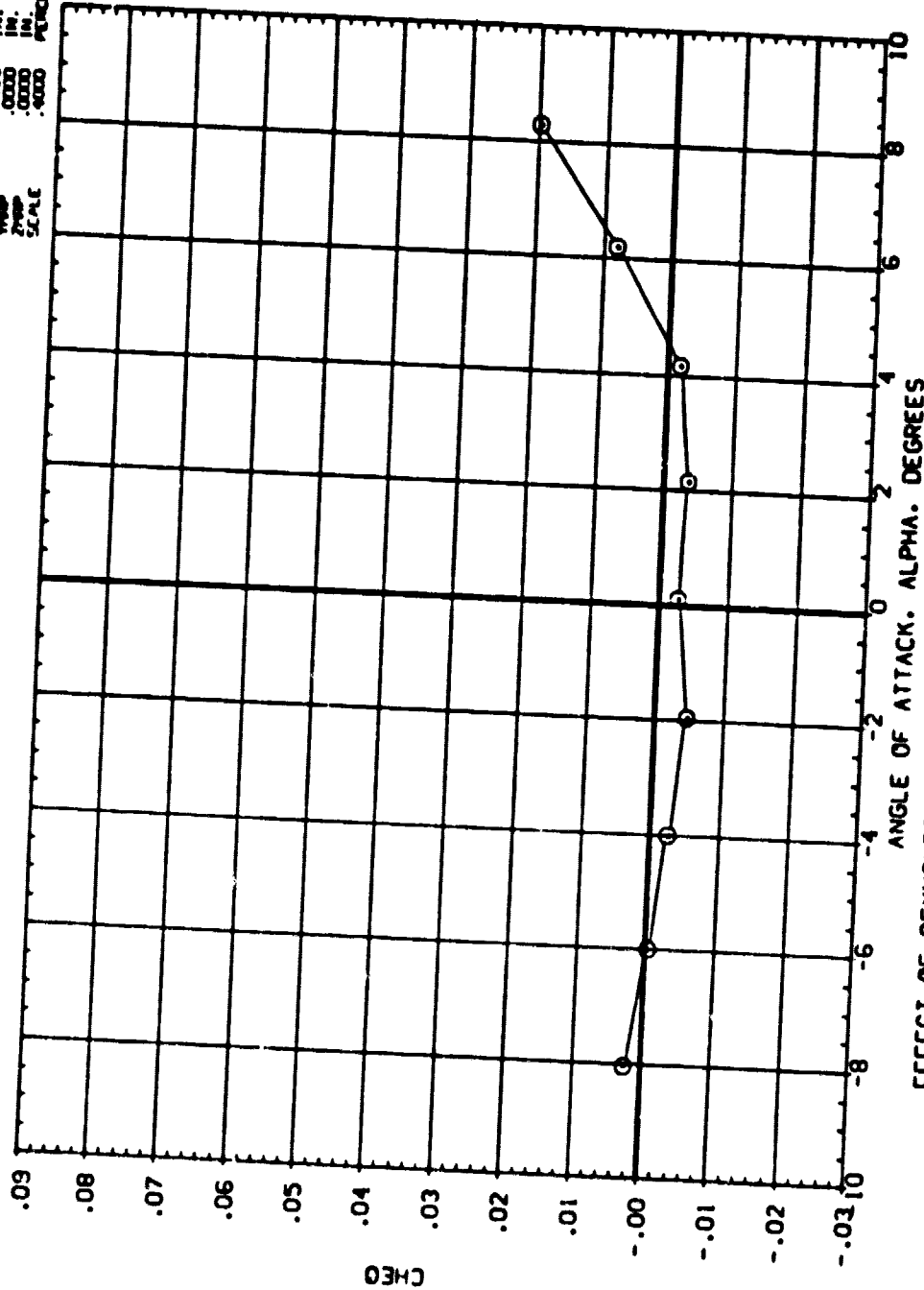


EFFECT OF REYNOLDS NUMBER

(B)MACH = .90

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2028) FA20. MSFC TWT 525. CONFIG. 02V2E2MMA11353
 (FA2064) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SKET 5.1253 50. IN
 LINE 5.1612 10. IN
 SKET 2.1470 10. IN
 SKET 2.1470 10. IN
 WARP 0.0000 10. IN
 ZWAP 0.0000 10. IN
 SCALE .0000 PERCENT



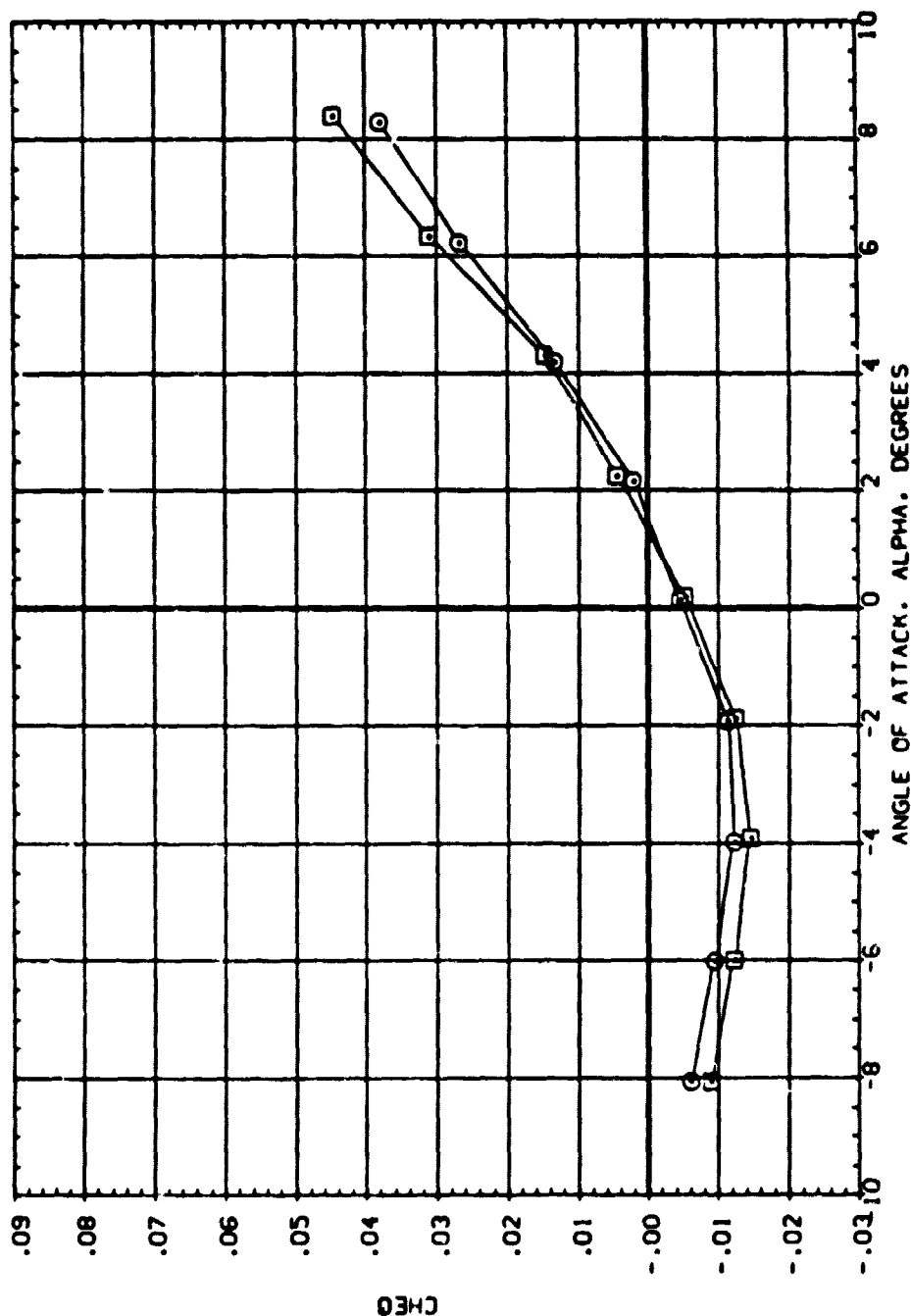
EFFECT OF REYNOLDS NUMBER

(C)MACH = .95

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DATA SET SYMBOL: (FA2000) 8
 CONFIGURATION DESCRIPTION: FA2000 M57C INT 555. CONF IG. 0204E2000PATT1253
 FA2000 M57C INT 555. CONF IG. 0204E2000PATT1253

REFERENCE INFORMATION
 SET 5.1580 IN.
 LIFT 5.1512 IN.
 DRIFT 3.2470 IN.
 YAW 2.7120 IN.
 ZWIND 0.0000 IN.
 SCALE 4000 PERCENT

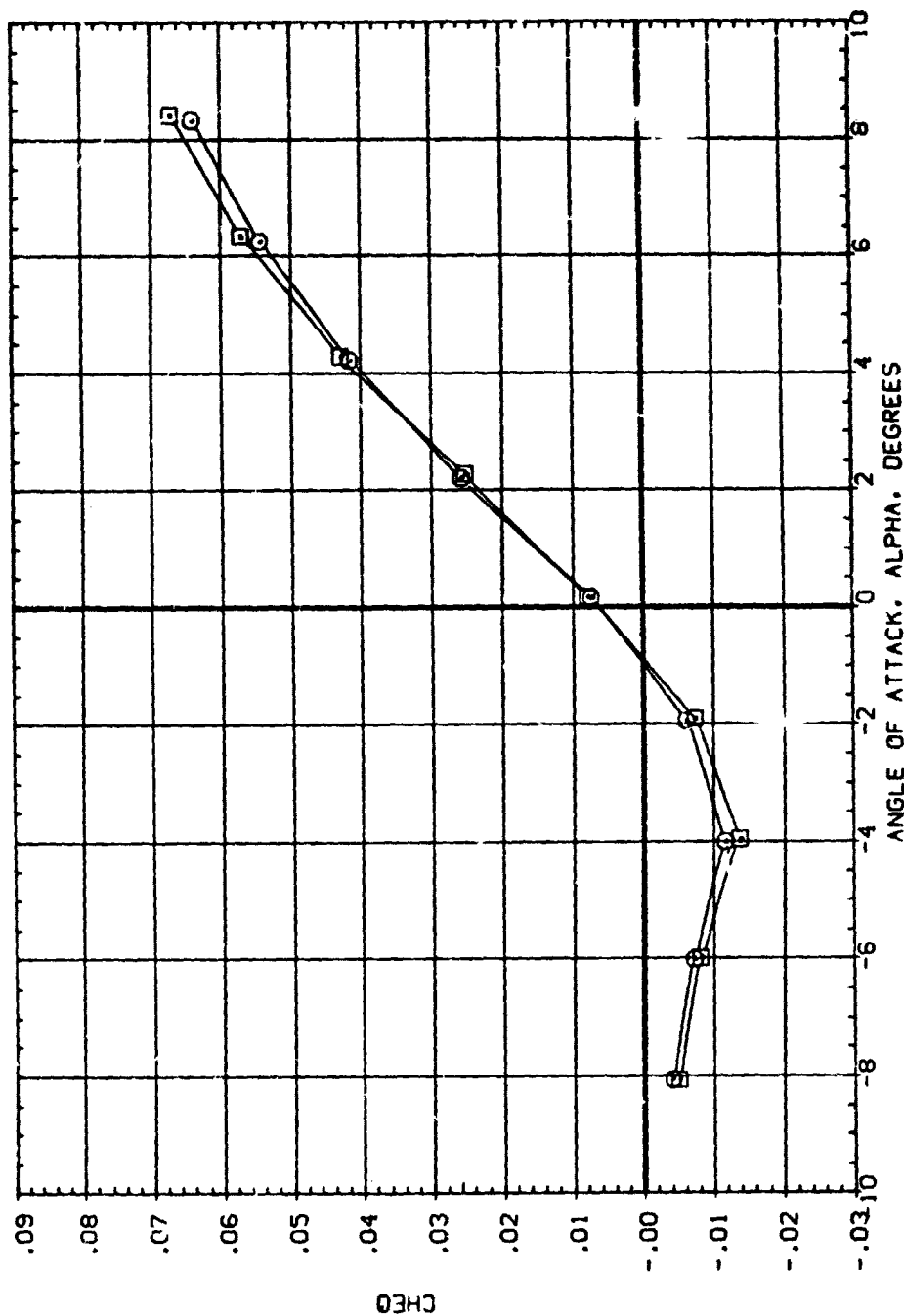


EFFECT OF REYNOLDS NUMBER

(D)MACH = 1.05

DATA SET SYMBOL: B
 (FA2864)
 CONFIGURATION DESCRIPTION:
 FA28: MSFC TWT 556; CONF IG. 02VZ22NPAAT1353
 FA28: MSFC TWT 556; CONF IG. 03VZ22NPAAT1353

REFERENCE INFORMATION
 SREF 6.1560 SQ. IN.
 LREF 5.1612 IN.
 BRPF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

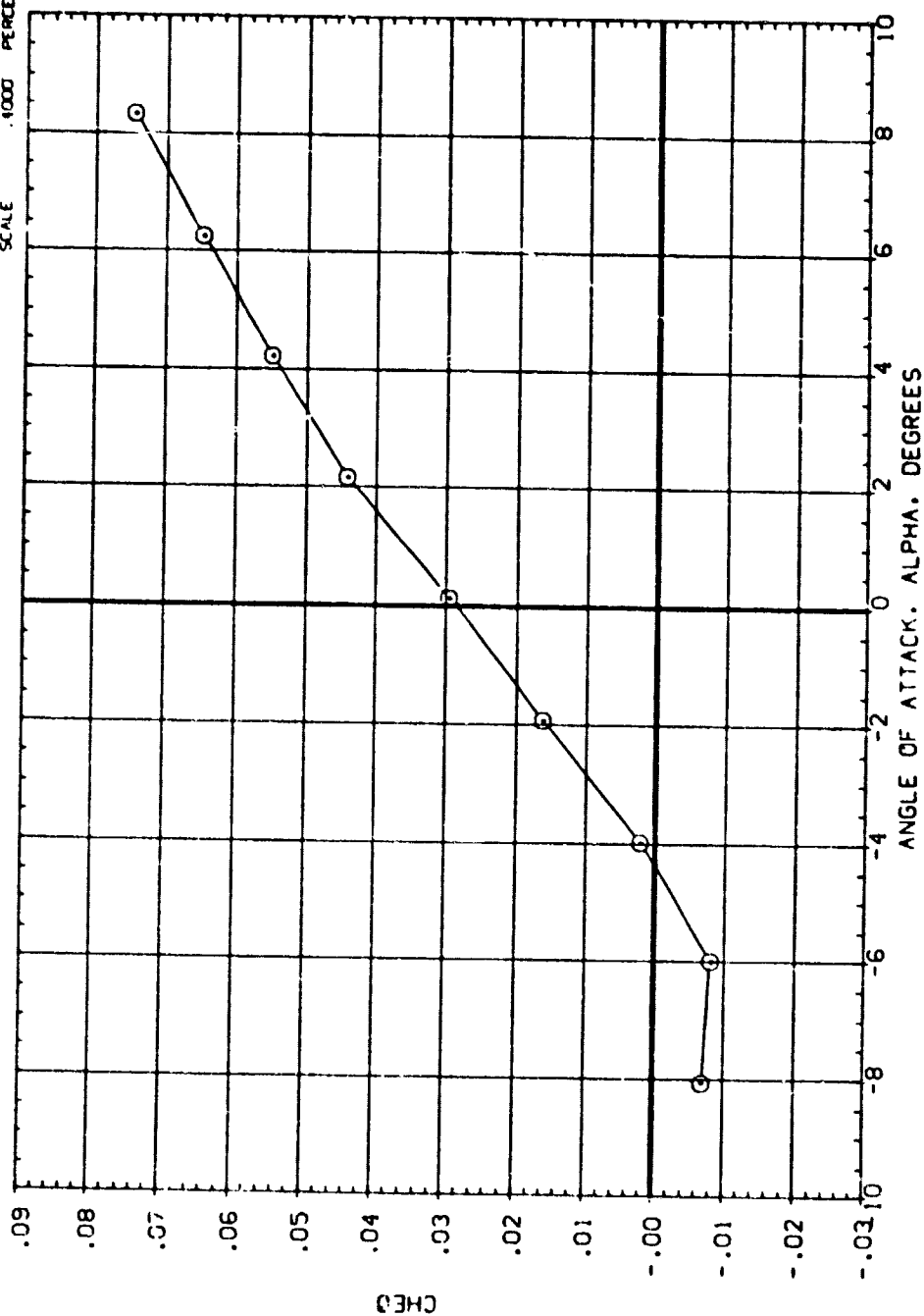


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.10

DATA SET SYMBOL: FA28, M2FC TWT 656, CONFIG. 02N2E20NPAATT353
 (FA2859) □ DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 3.1612 IN.
 BREF 3.4970 IN.
 WREF 2.1120 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE 1000 PERCENT



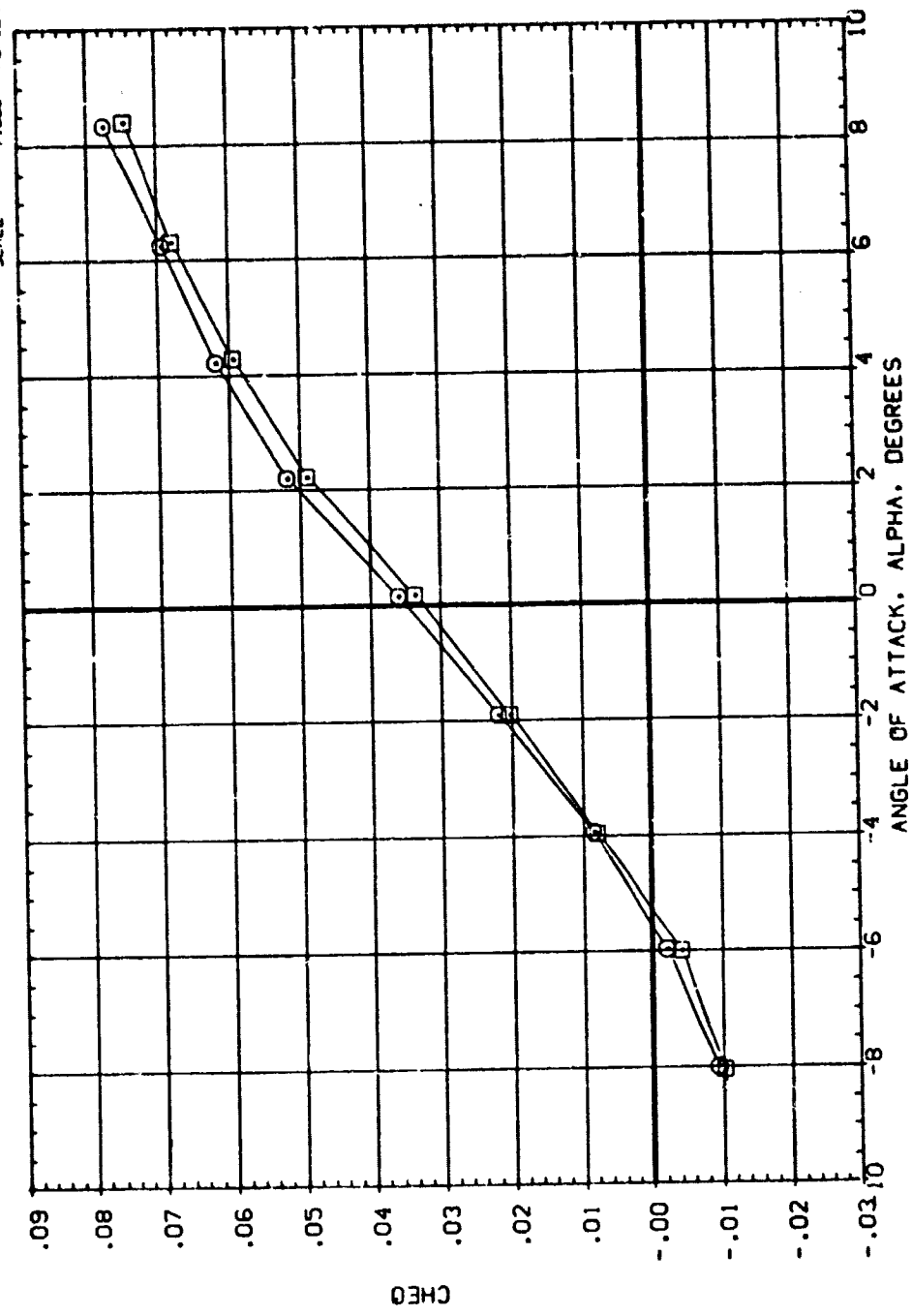
EFFECT OF REYNOLDS NUMBER

(F)MACH = 1.15

DATA SET SYMBOL:
 (FA2058)
 (FA2064)

CONFIGURATION DESCRIPTION:
 FA20. MSFC TVT 656. CONF 1G. 02V2E2M4PAAT1353
 FA20. MSFC TVT 656. CONF 1G. 02V2E2M4PAAT1353

REFERENCE INFORMATION:
 SREF 6.1900 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 AREF 2.7120 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

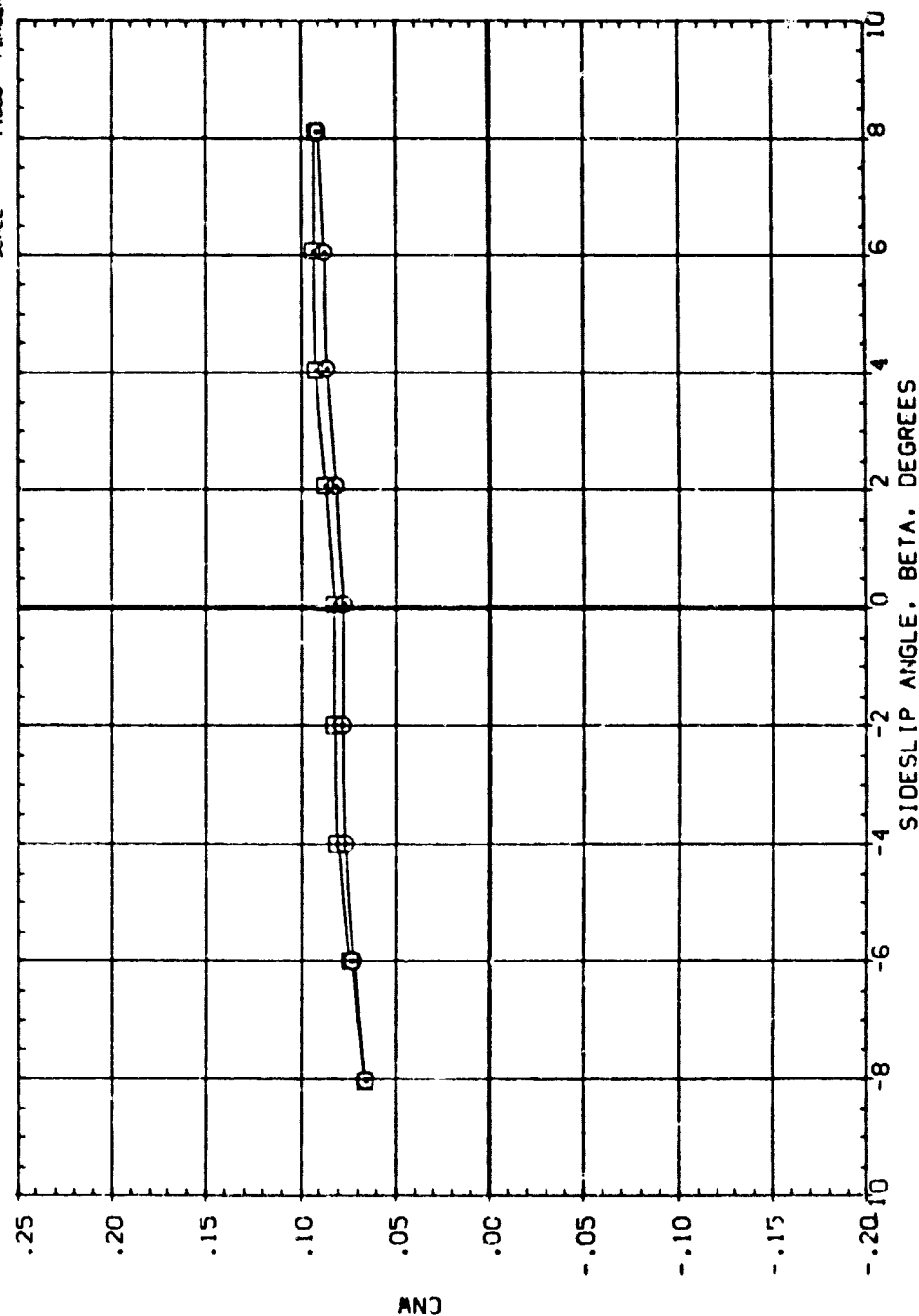


EFFECT OF REYNOLDS NUMBER

(G)MACH = 1.25

DATA SET SYMBOL: (FA2859) (FA2853)
 CONFIGURATION DESCRIPTION: FA28. MSC TWT 656. CONF 10. OZVZ20PANT1353
 FA28. MSC TWT 656. CONF 10. OZVZ20PANT1353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1512 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 YREF 1.0000 IN.
 ZREF 1.0000 IN.
 SCALE .4000 PERCENT



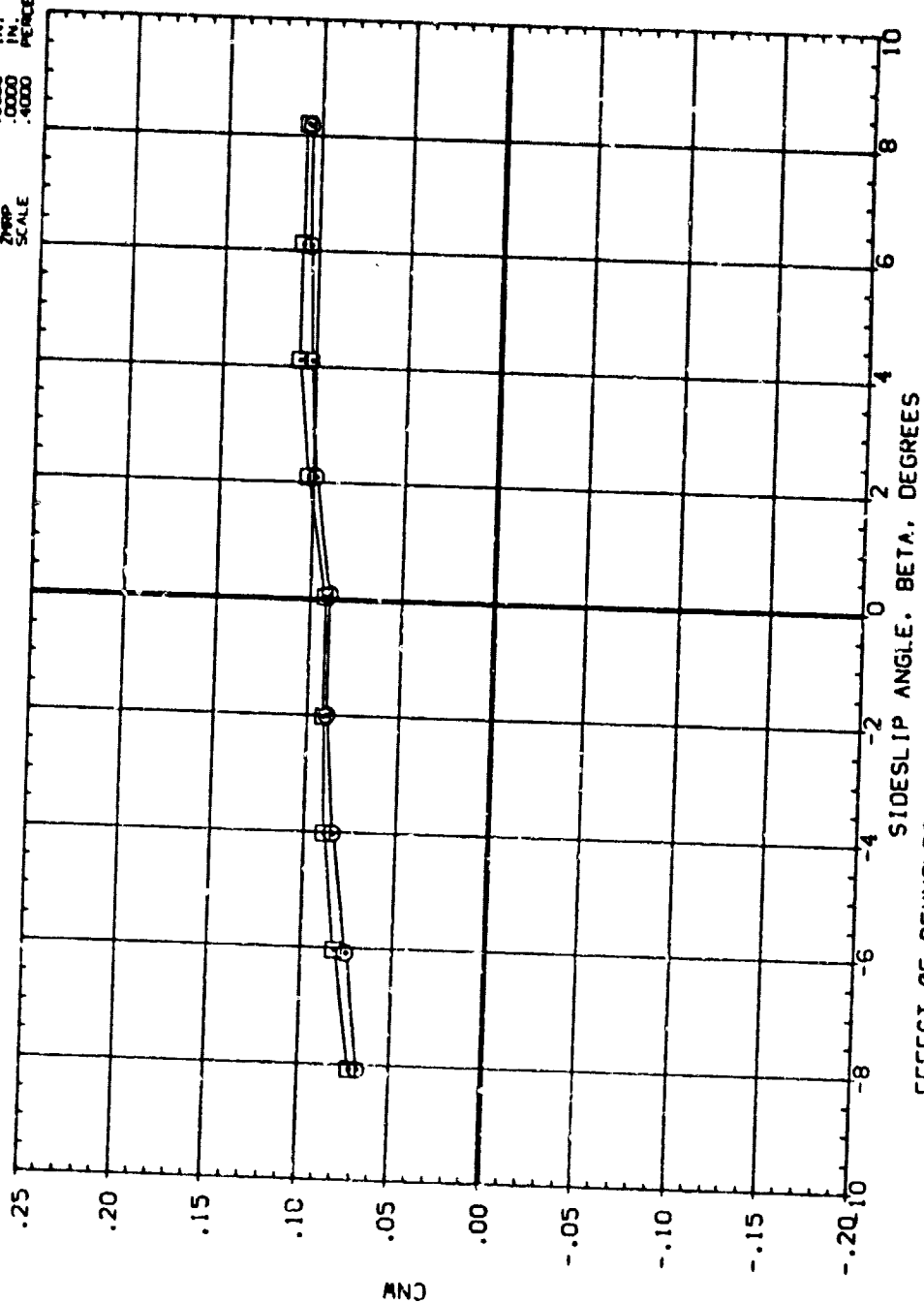
EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

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DATA SET SYMBOL: B
 CONFIGURATION DESCRIPTION:
 FA28. MSC TWT 656. CONFIG. 02VJEZPAAATT353
 FA28. MSC TWT 656. CONFIG. 02VJEZPAAATT353

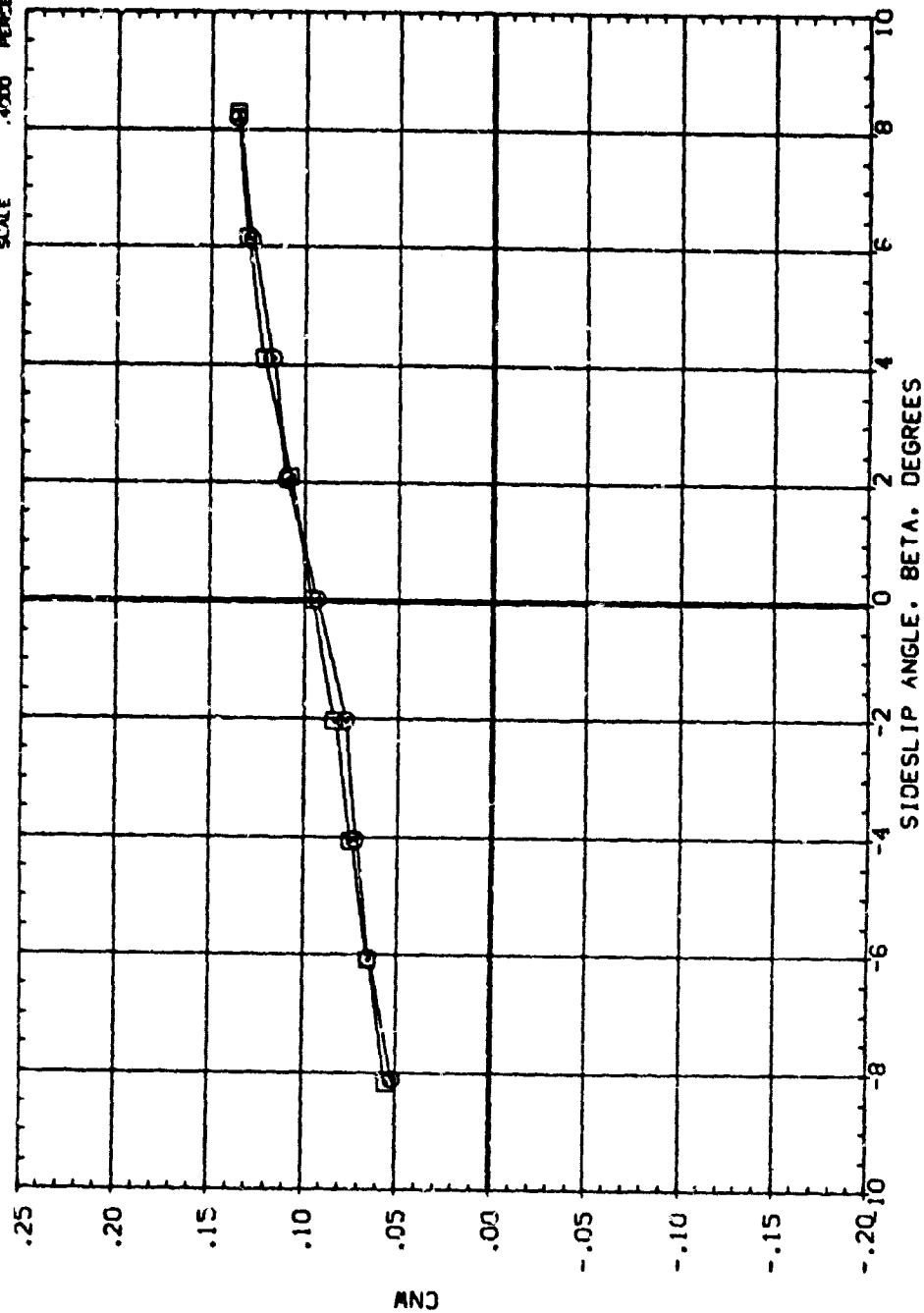
REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF REYNOLDS NUMBER
 (B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2859) □ FA28, MSC TWT 656, CONFIG. 03VZ28PAAT1353
 (FA2865) □ FA28, MSC TWT 656, CONFIG. 03VZ28PAAT1353

REFERENCE INFORMATION
 REF. 6.1800 SQ. IN.
 UNF. 3.1612 IN.
 REF. 2.7120 IN.
 WSP. 1.0000 IN.
 ZREF. 1.0000 IN.
 SCALE .0000 PERCENT

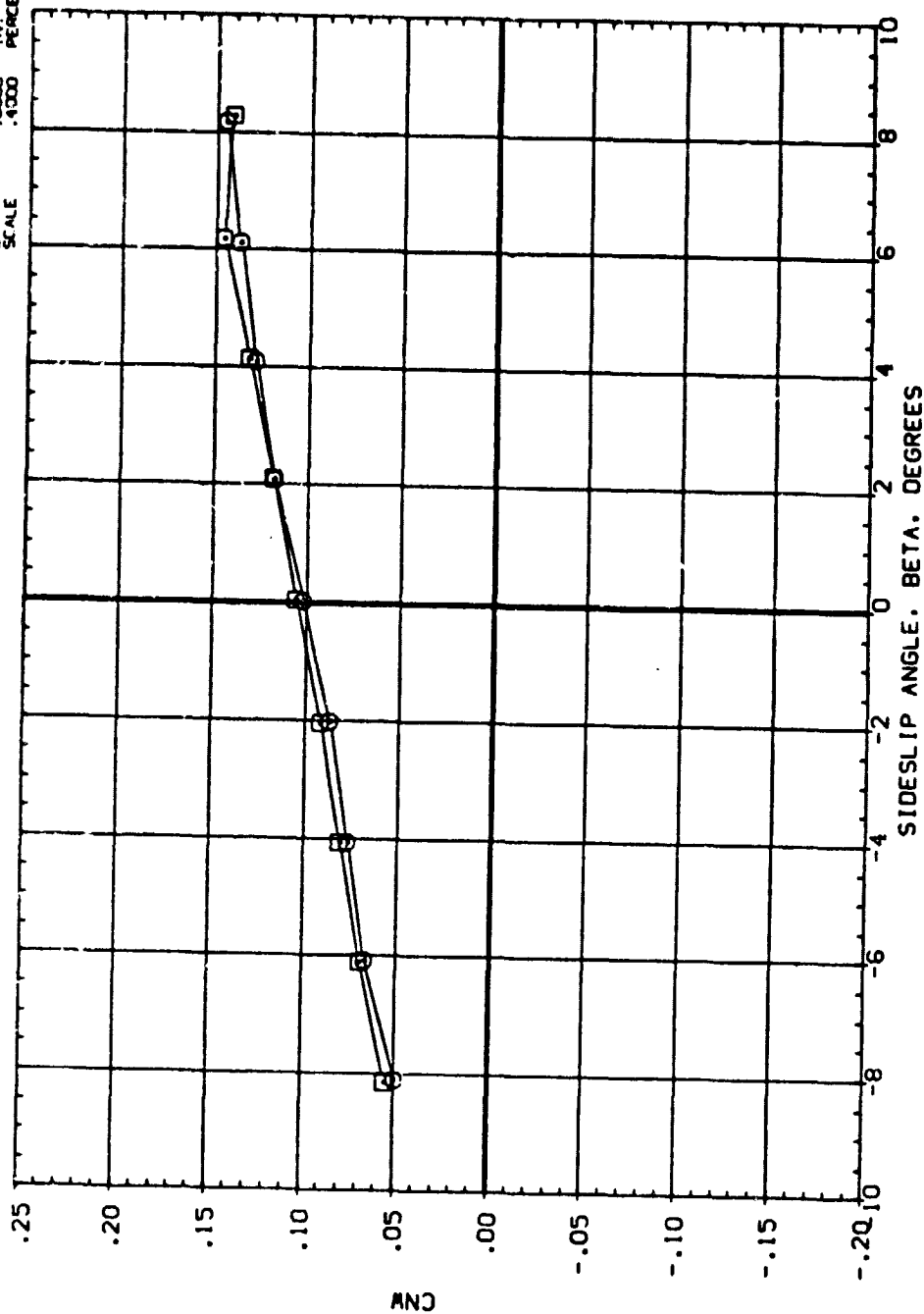


EFFECT OF REYNOLDS NUMBER

(C)MACH = 1.05

DATA SET SYMBOL: (FA2859)
 CONFIGURATION DESCRIPTION: FA28, MSFC, WT 556, CONFIG: 02VZEPNPAAT1353
 (FA2855)

REFERENCE INFORMATION
 SREF: 6.1580 IN
 LREF: 5.1612 IN
 BREF: 3.7470 IN
 YREF: 2.7120 IN
 ZREF: .0000 IN
 SCALE: .4000 PERCENT



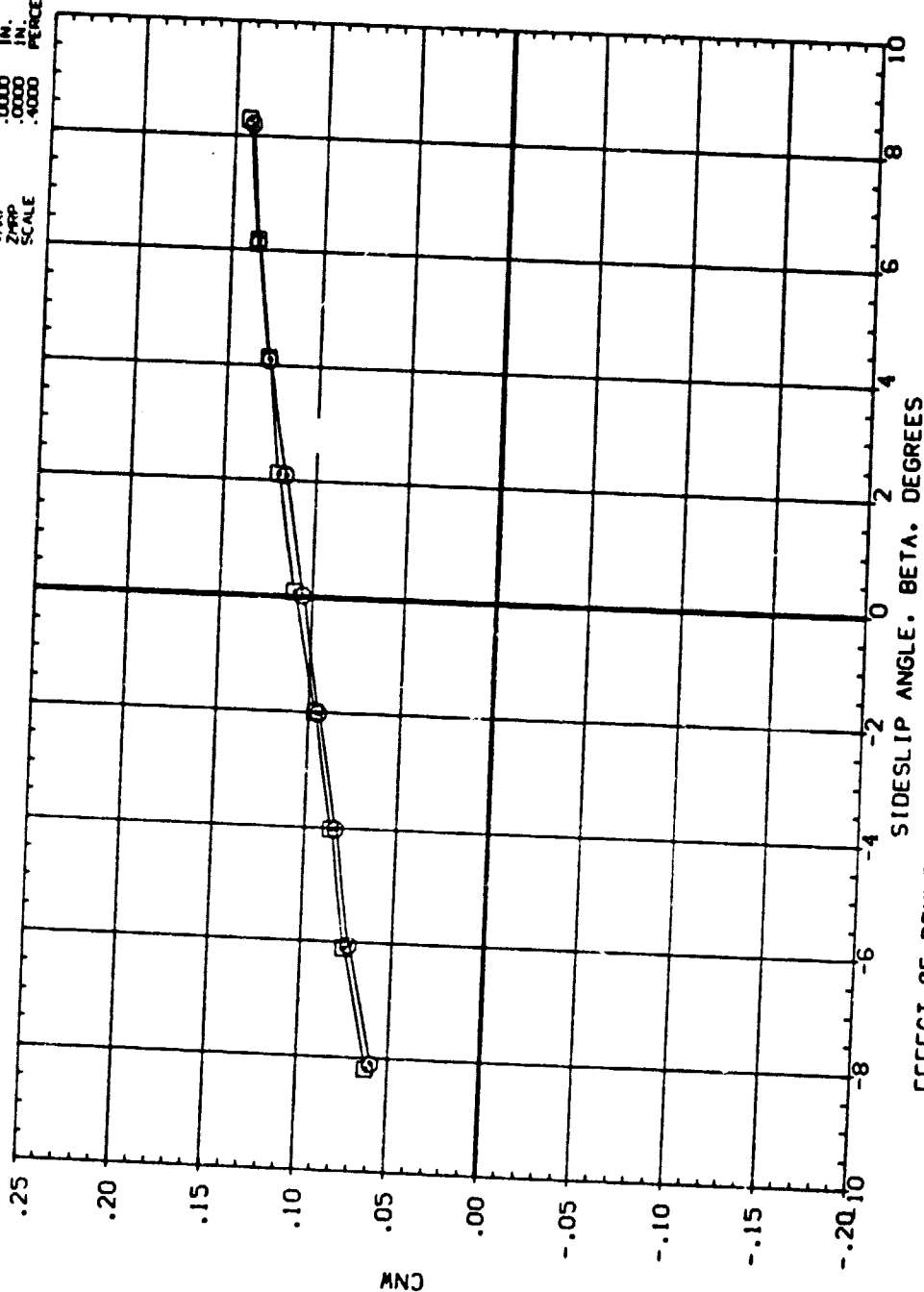
EFFECT OF REYNOLDS NUMBER

(D)MACH = 1.10

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 OF POOR QUALITY

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2859) □ FA28. MSFC TVT 656. CONF IG. 02VZ28PAA11353
 (FA2863) □ FA28. MSFC TVT 656. CONF IG. 02VZ28PAA11353

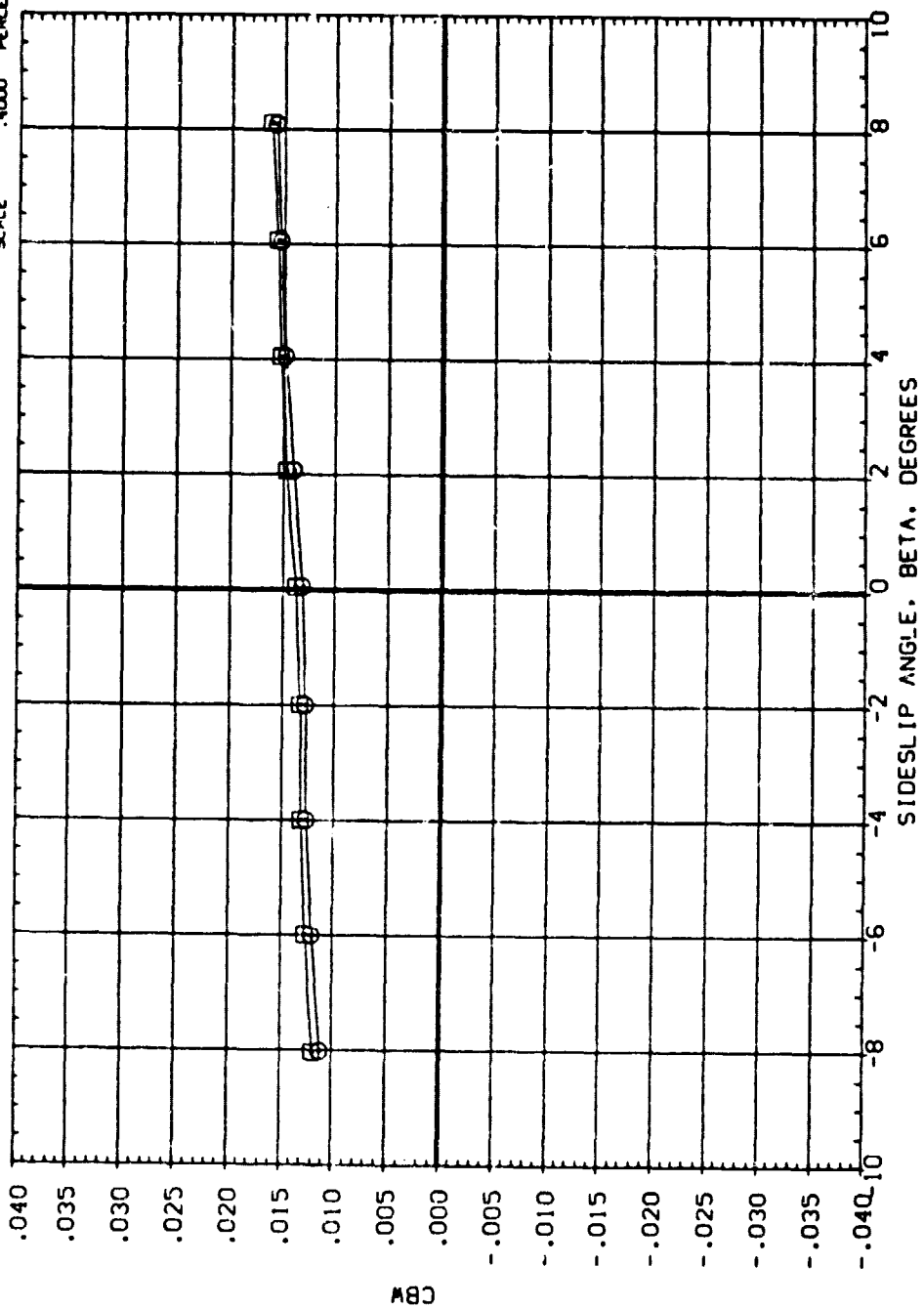
REFERENCE INFORMATION
 SREF 6.1580 SO. IN
 LREF 5.1612 IN.
 BRPF 3.7470 IN.
 ARPF 2.7120 IN.
 ZMPD .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF REYNOLDS NUMBER
 (E)MACH = 1.25

DATA SET SYMBOL: B
 CONFIGURATION DESCRIPTION: FA28, MSFC, TWT, 556, CONF 10, 02VZ2ZNPAA11333
 FA28, MSFC, TWT, 556, CONF 10, 02VZ2ZNPAA11333

REFERENCE INFORMATION:
 SREF: 6.1980 SQ. IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 XMRP: 2.7120 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .4000 PERCENT

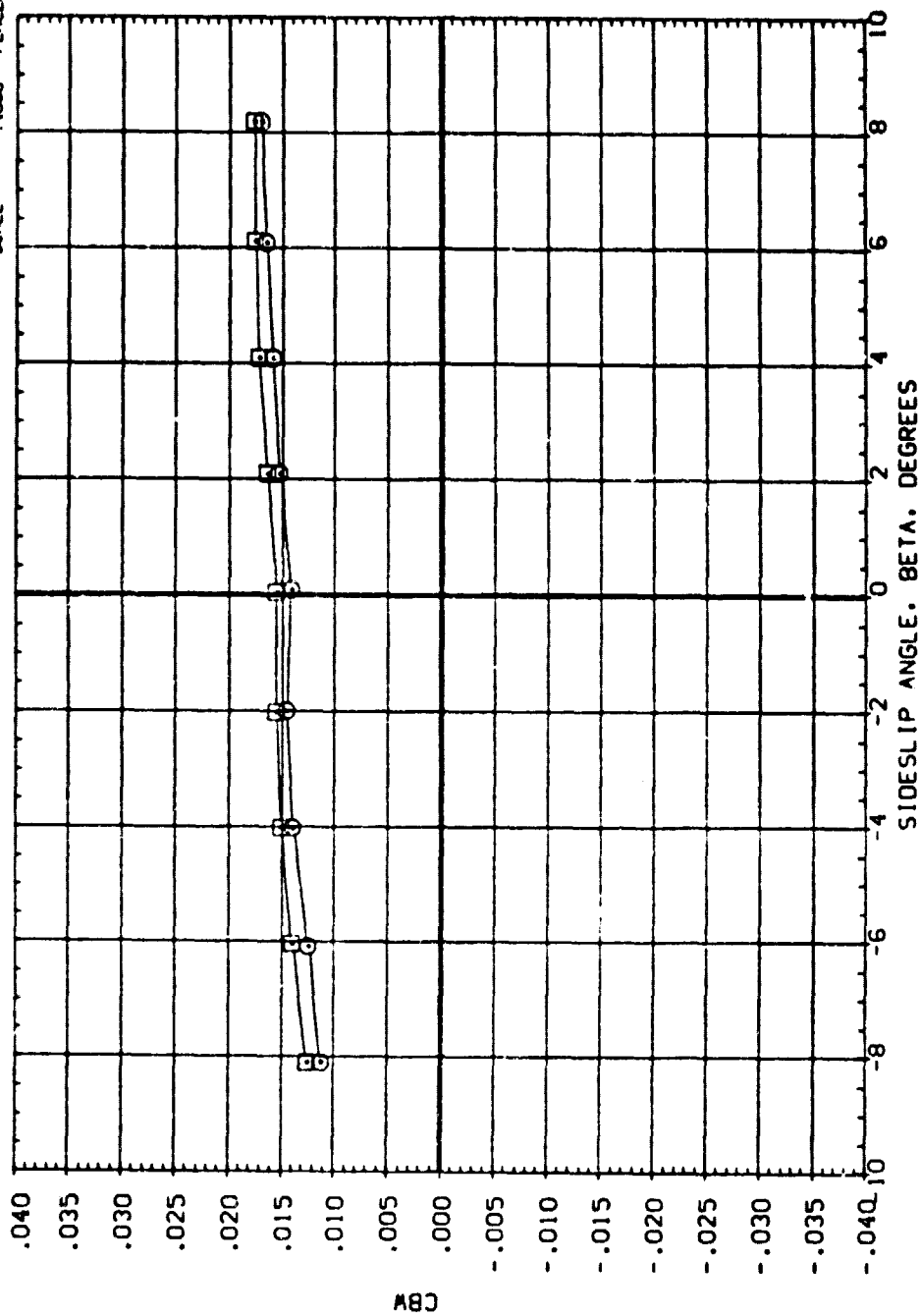


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2833) □ FA28. MSC TVT 656. CONFIG. 02VZ22M4AATT253
 (FA2865) □ FA28. MSC TVT 656. CONFIG. 02VZ22M4AATT253

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 HREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

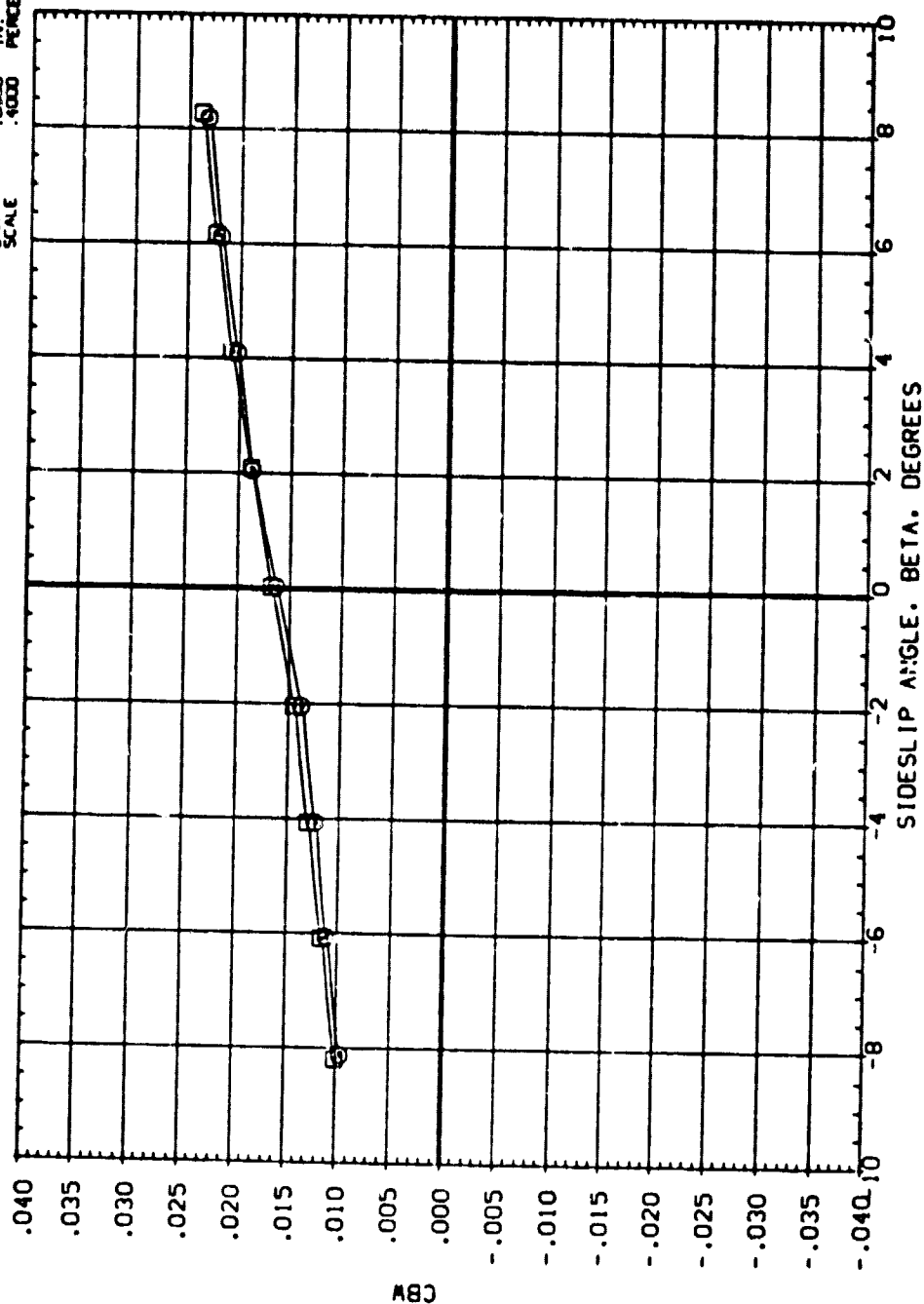


EFFECT OF REYNOLDS NUMBER

(B)MACH = .90

DATA SET SYMBOL: **CONF** CONFIGURATION DESCRIPTION
 (FA2853) **FA28** MSFC TWT 556. CONF 10. 02VZL2MPLATTJ53
 (FA2853) **FA28** MSFC TWT 556. CONF 10. 02VZL2MPLATTJ53

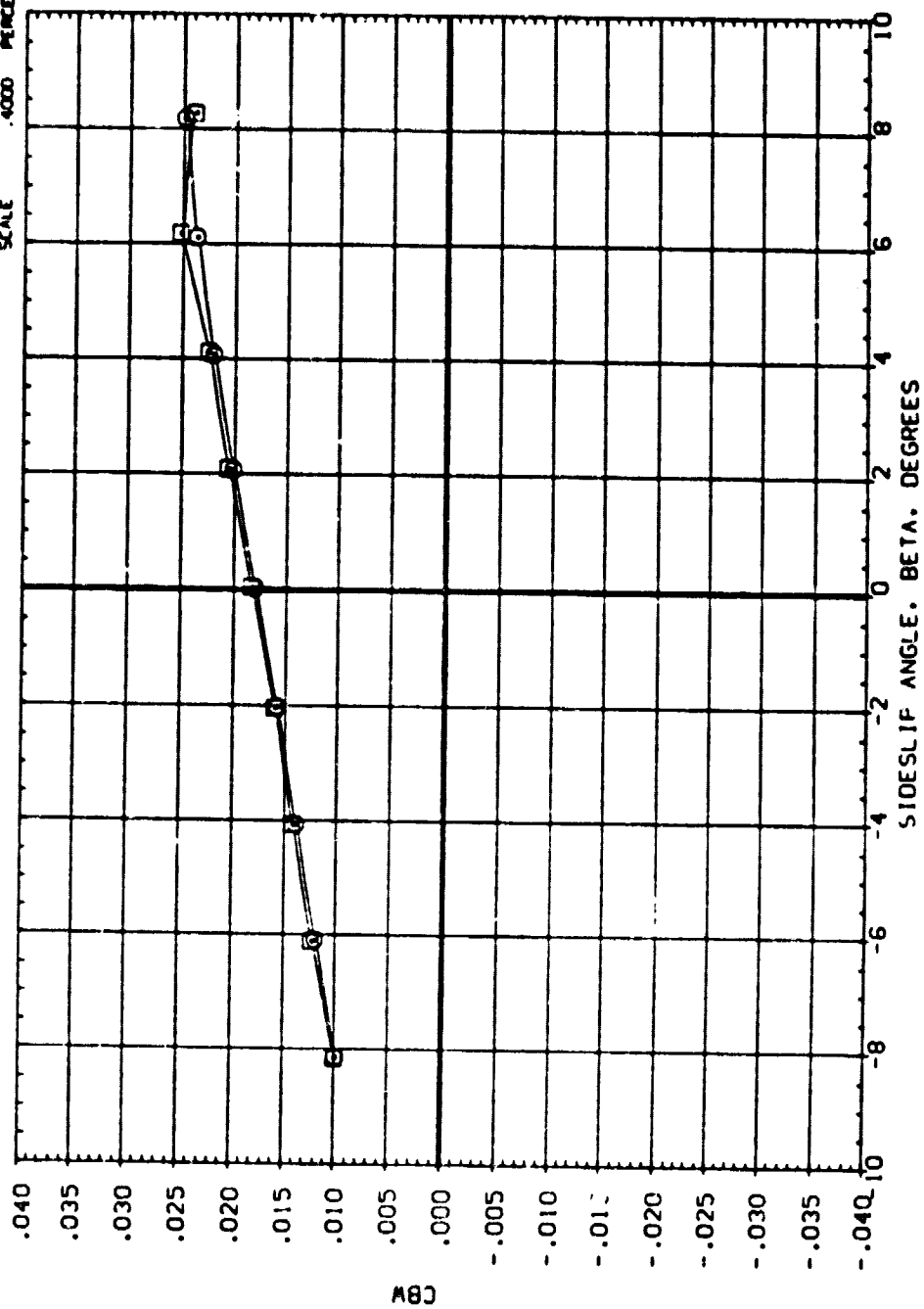
REFERENCE INFORMATION
 SREF 5.1580 IN.
 LREF 5.1512 IN.
 BREF 3.7470 IN.
 XPROP 2.7120 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF REYNOLDS NUMBER

(C)MACH = 1.05

REFERENCE INFORMATION	
SREF	6.1980 IN.
LREF	5.1612 IN.
BREF	3.7470 IN.
XREF	2.7120 IN.
VREF	.0000 IN.
ZREF	.0000 IN.
SCALE	.0000 PERCENT

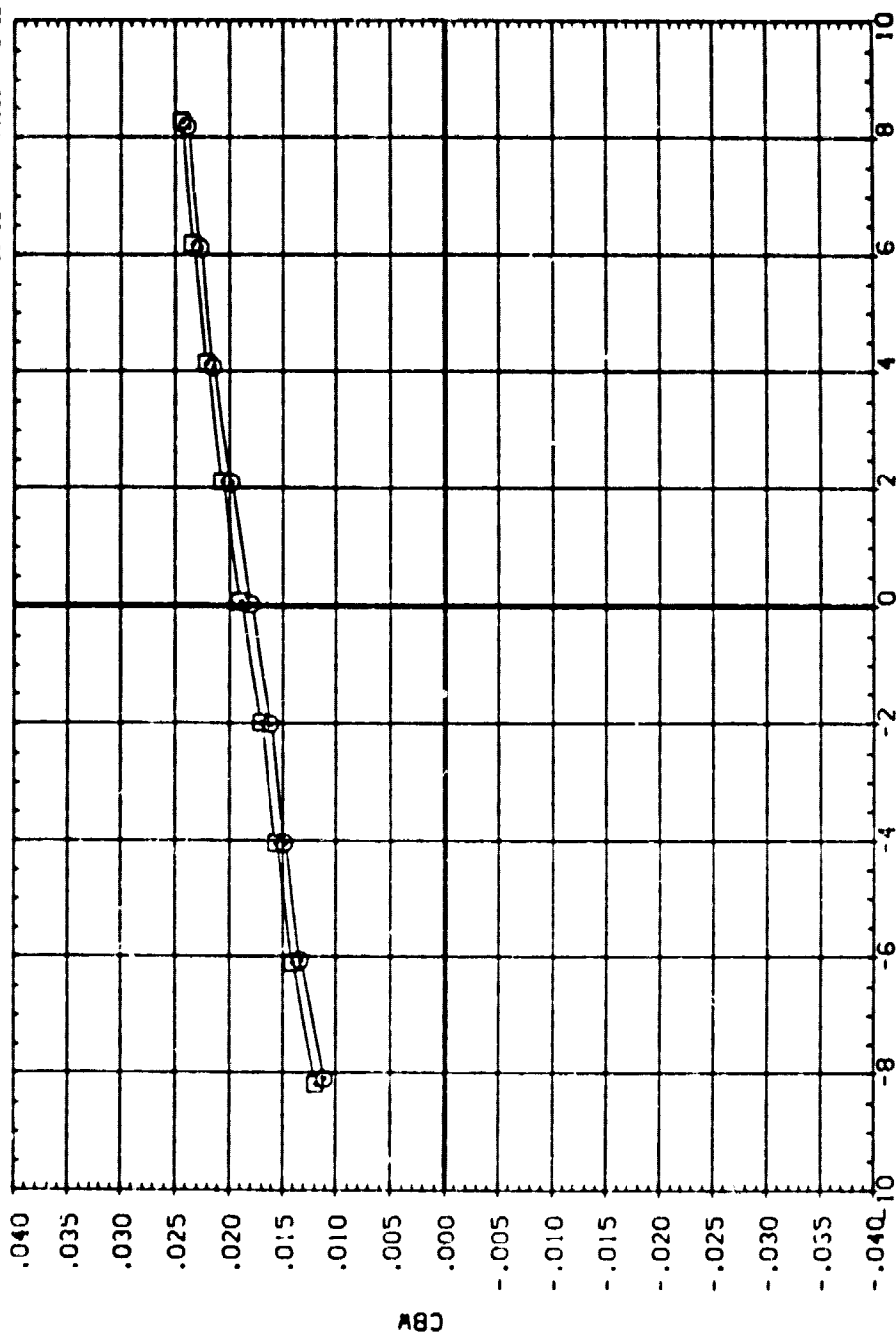


EFFECT OF REYNOLDS NUMBER

$$(0)_{\text{MACH}} = 1.10$$

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2855) □ FA28. MSFC 147 656. CONF 16. 0207E28PAA11253
 (FA2855) □ FA28. MSFC 147 656. CONF 16. 0207E28PAA11253

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

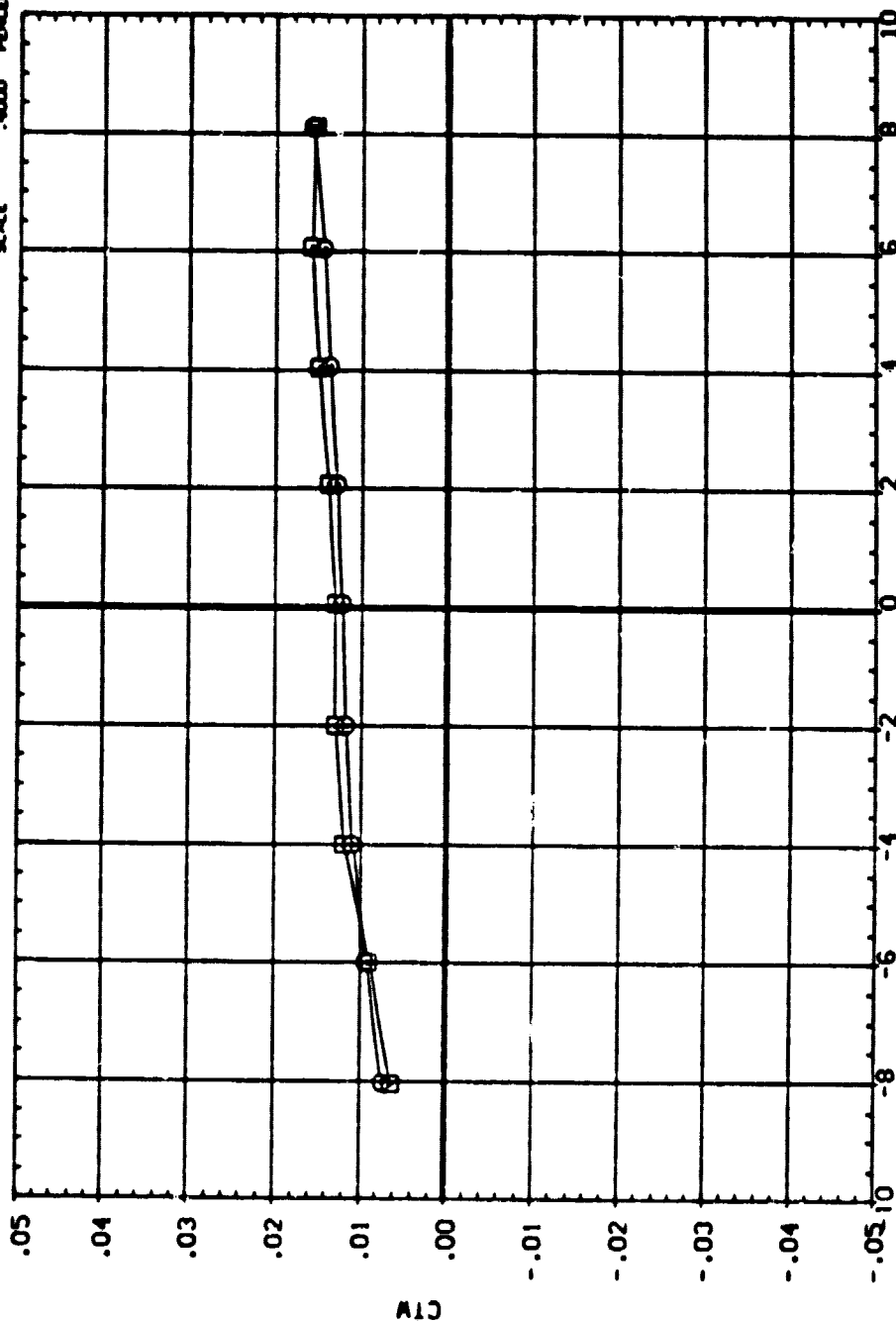


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.25

DATA SET SYMBOL: B
 (FA2059) (FA2065)
 CONFIGURATION DESCRIPTION:
 FA20. MSFC TWT 555. CONF 10. CONVEZ-MPHATT253
 FA20. MSFC TWT 555. CONF 10. CONVEZ-MPHATT253

REFERENCE INFORMATION:
 SWLP 9.1980 IN.
 LWF 3.1612 IN.
 WPC 3.7470 IN.
 WPP 2.7120 IN.
 WWP .0000 IN.
 SCALE .0000 PERCENT

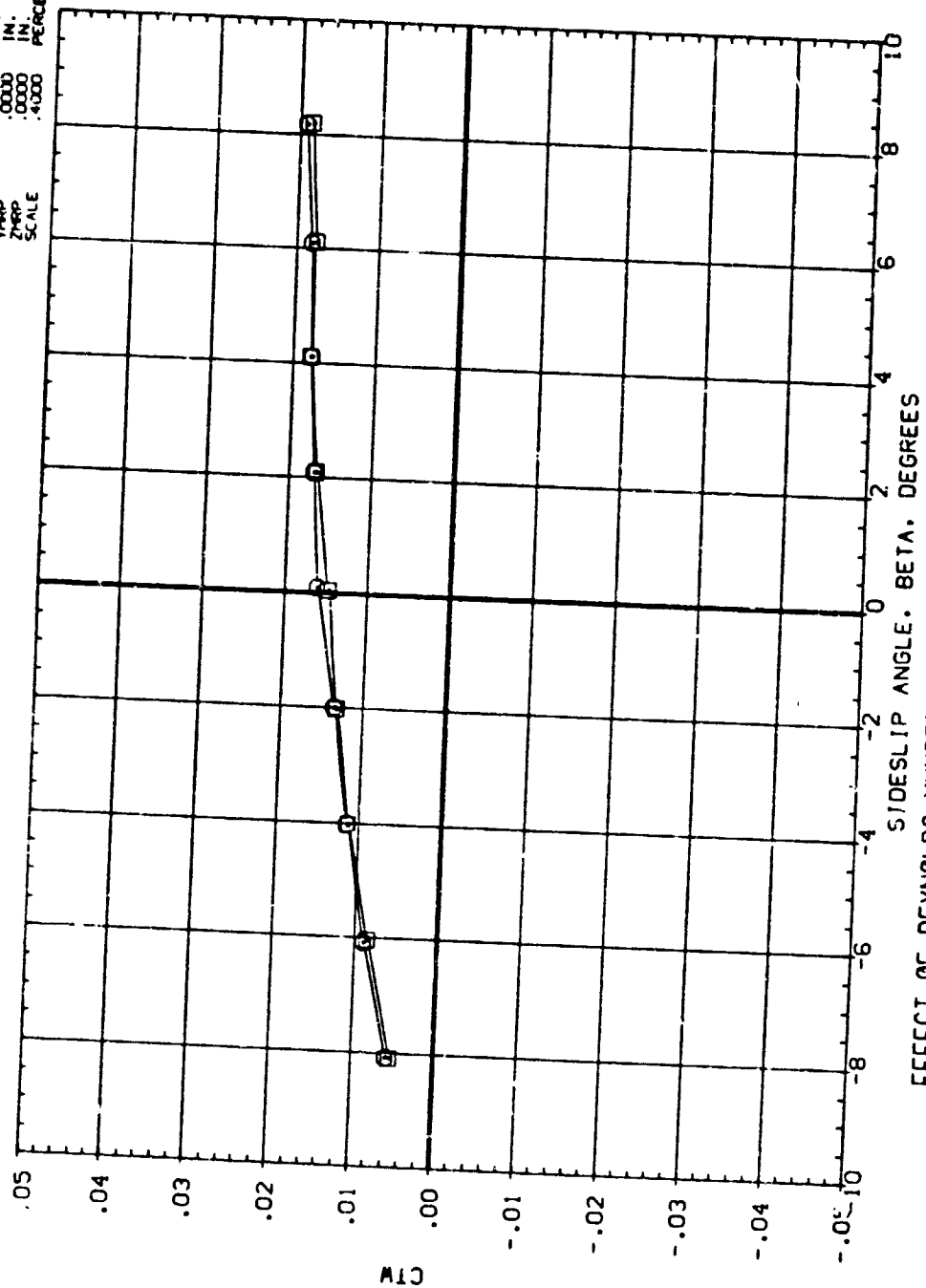


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

DATA SET SYMBOL: B CONFIGURATION DESCRIPTION:
 (FA2859) FA28. MSC TVT E56. CONFIG. 02NZE2PAPATT353
 (FA2865) FA28. MSC TVT E56. CONFIG. 02NZE2PAPATT353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 XREF 5.1612 IN.
 YREF 3.7470 IN.
 XHREF 2.7120 IN.
 YHREF .0000 IN.
 ZHREF .0000 IN.
 SCALE .4000 PERCENT

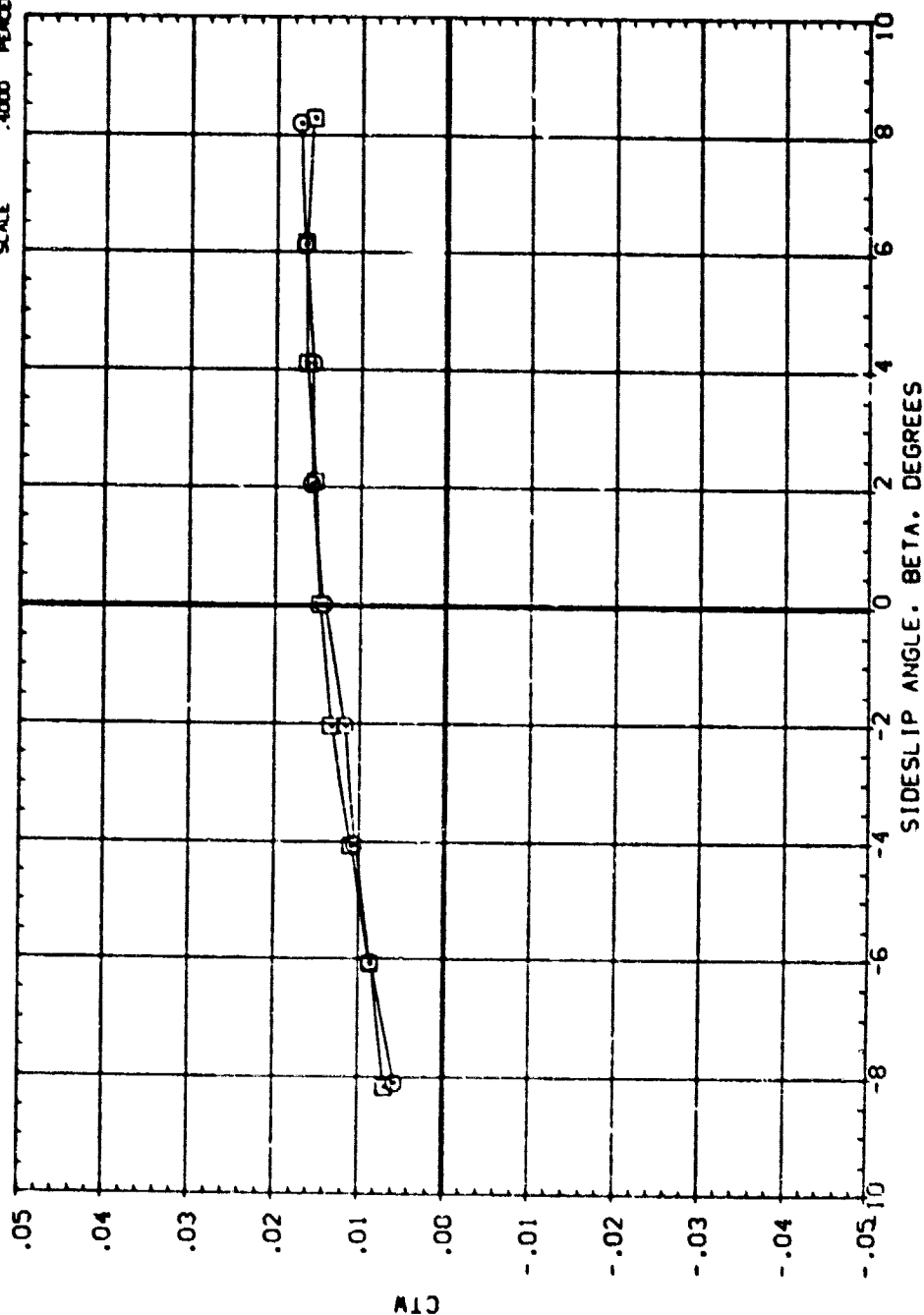


EFFECT OF REYNOLDS NUMBER

(B)MACH = .90

DATA SET SYMBOL: FA28. MSFC TVT 656. CONF IG. CONVEZMPAATT253
 (FA2853) FA28. MSFC TVT 656. CONF IG. CONVEZMPAATT253

REFERENCE INFORMATION
 SREF 6.1580 50. IN
 WREF 5.1612 IN.
 WREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

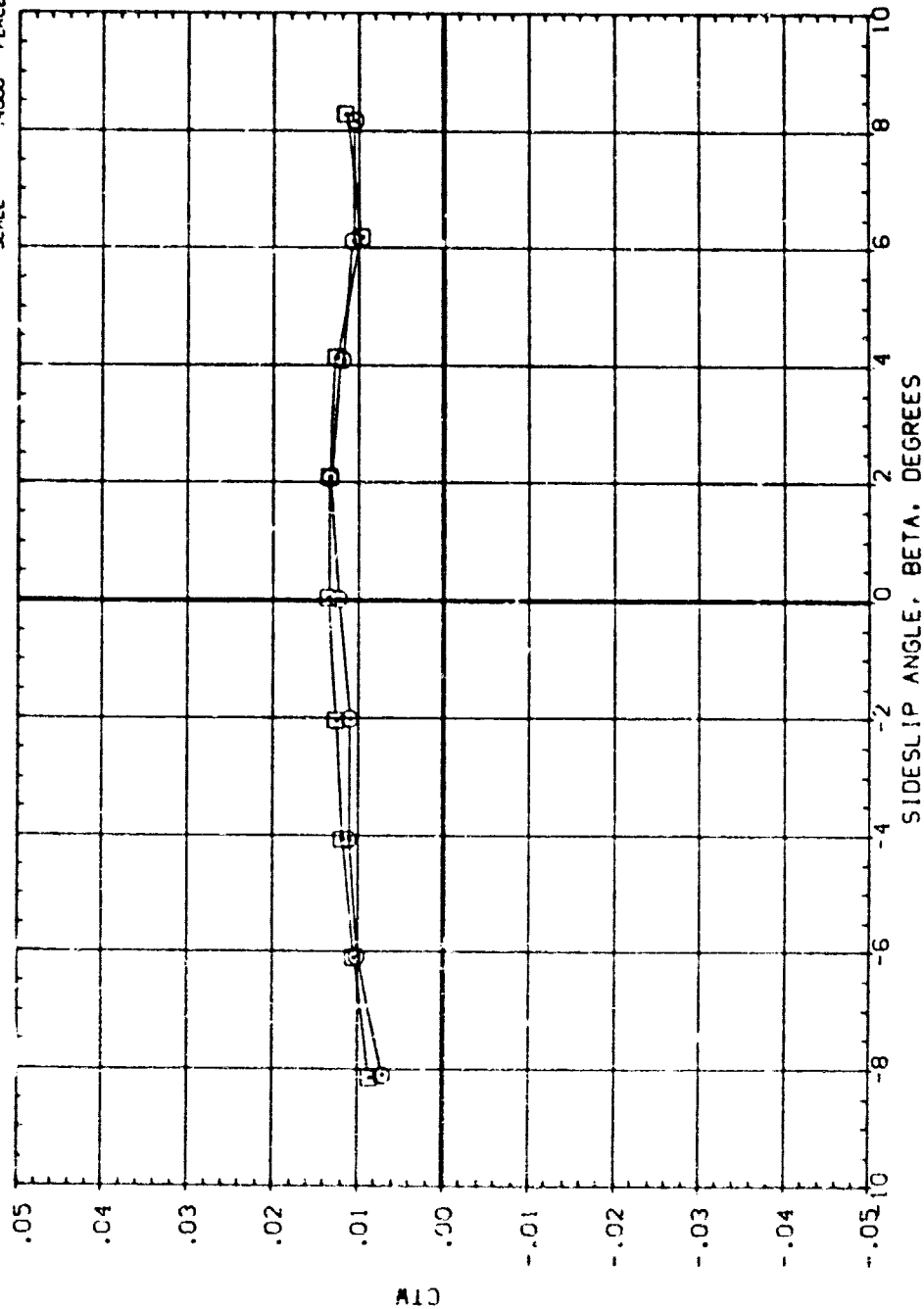


EFFECT OF REYNOLDS NUMBER

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2859) □ FA28. MSFC TNT 656. CONF 15. 02NZE200PAAT1353
 (FA2865) □ FA28. MSFC TNT 656. CONF 15. 02NZE200PAAT1353

REFERENCE INFORMATION
 SPREF 5.1980 IN
 LPREF 5.1612 IN
 BPREF 3.7470 IN
 XMPF 2.7120 IN
 YMPF .0000 IN
 ZMPF .0000 IN
 SCALE .4000 PERCENT

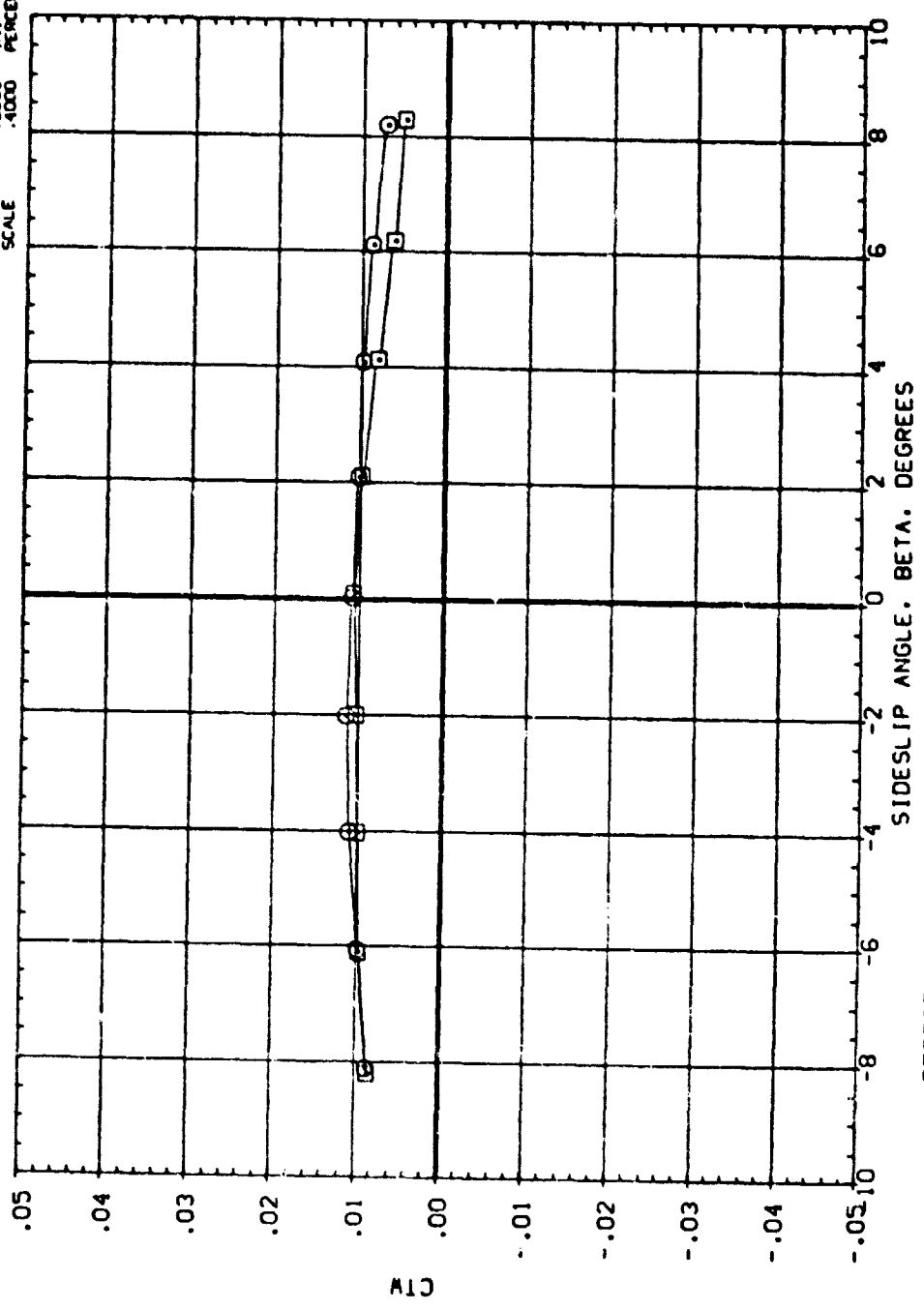


EFFECT OF REYNOLDS NUMBER

(D)MACH = 1.10

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2859) □ FA28. MSFC TWT 656. CONF IG. 02VZ2P0PAA11753
 (FA2865) □ FA28. MSFC TWT 656. CONF IG. 02VZ2P0PAA11753

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

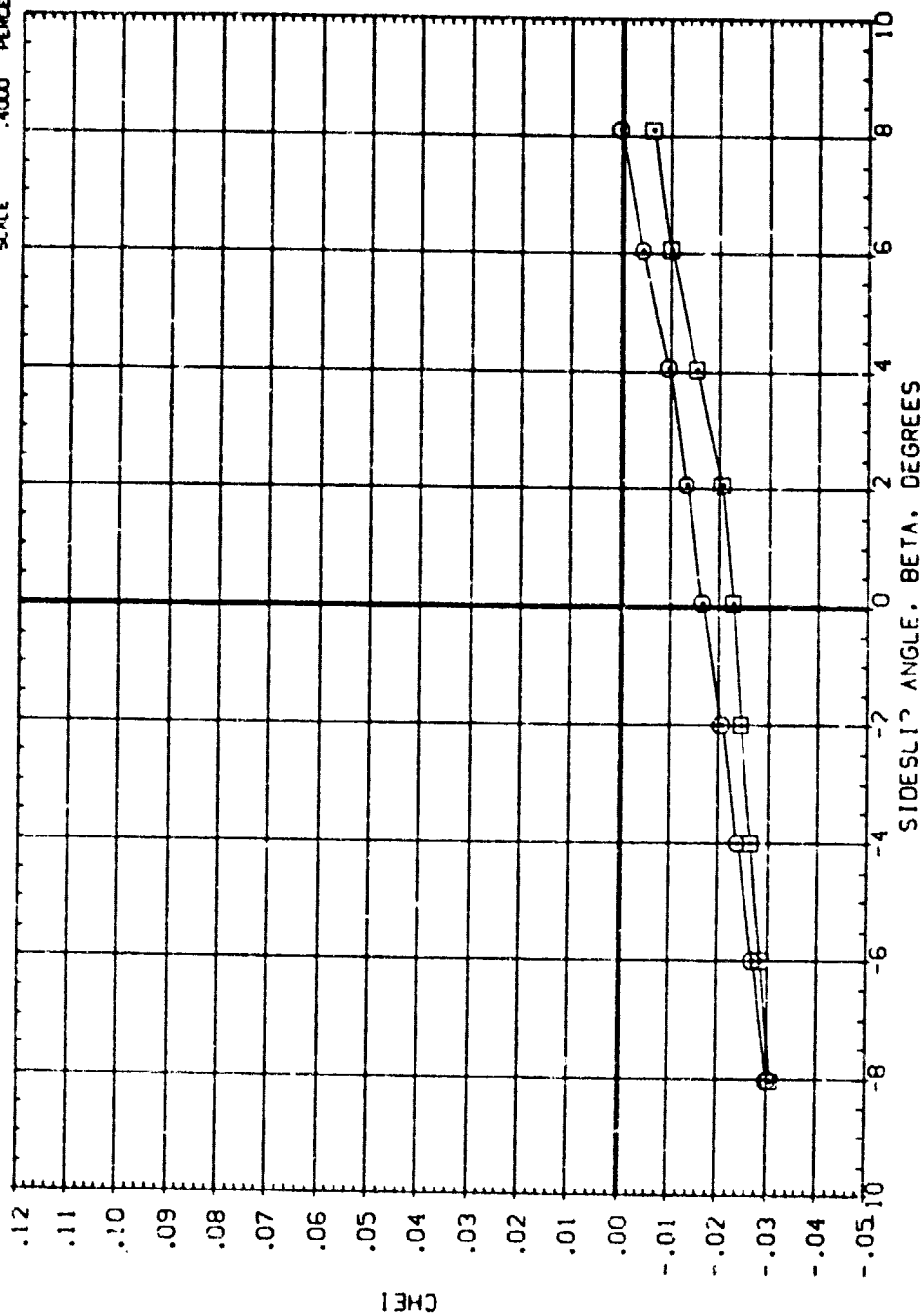


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.25

DATA SET SYMBOL: \square CONFIGURATION DESCRIPTION:
 (FA2059) FA20. MSC 147 655. CONF G. 02VZ20PAA11353
 (FA2055) FA20. MSC 147 655. CONF G. 02VZ20PAA11353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

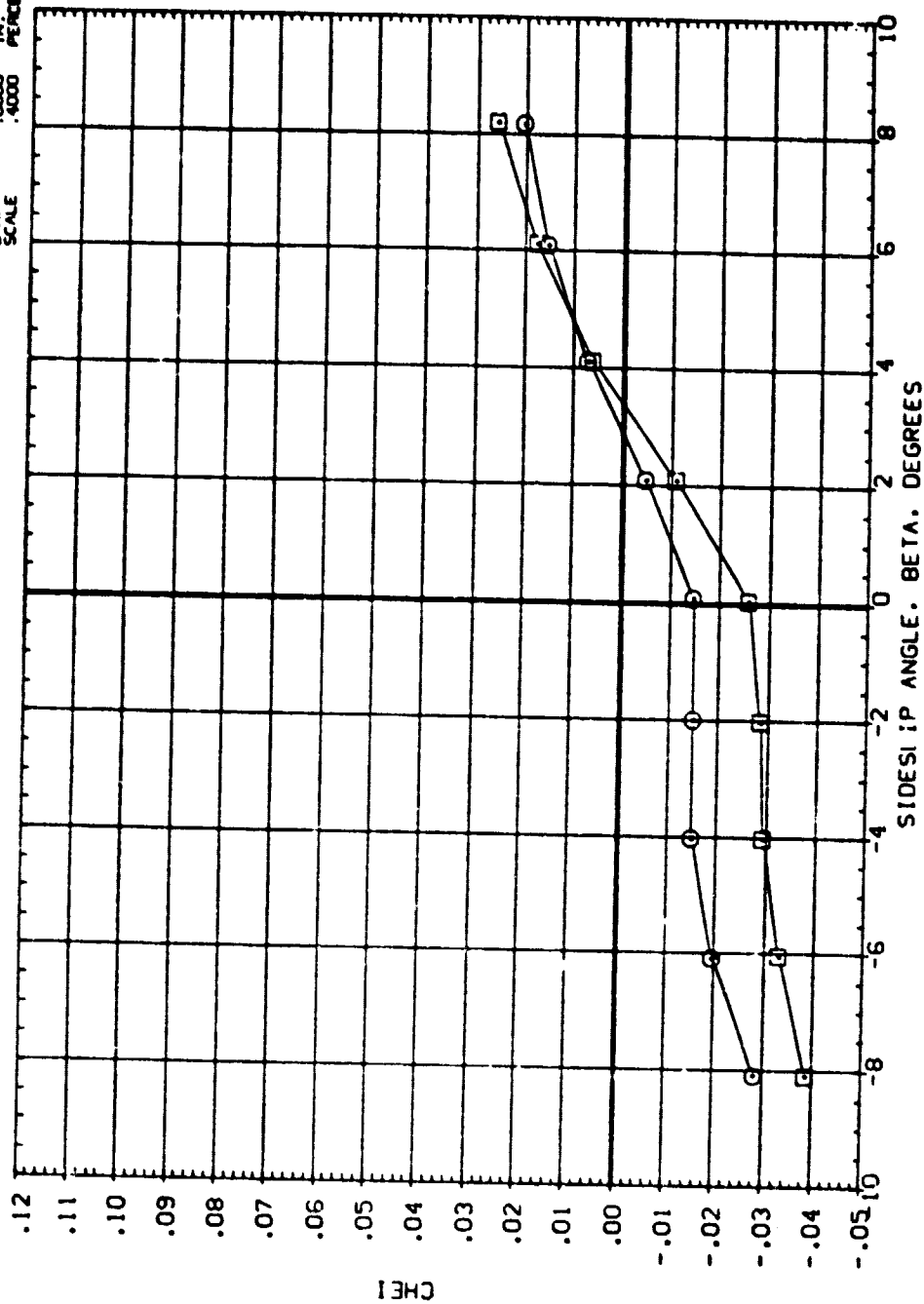


EFFECT OF REYNOLDS NUMBER

(A)MACH = .60

DATA SET SYMBOL: \square CONFIGURATION DESCRIPTION:
 (FA2853) FA28, MSFC TVT 555, CONF. 10. ONZE28PAATT353
 (FA2865) FA28, MSFC TVT 555, CONF. 10. ONZE28PAATT353

REFERENCE INFORMATION
 SREF 5.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



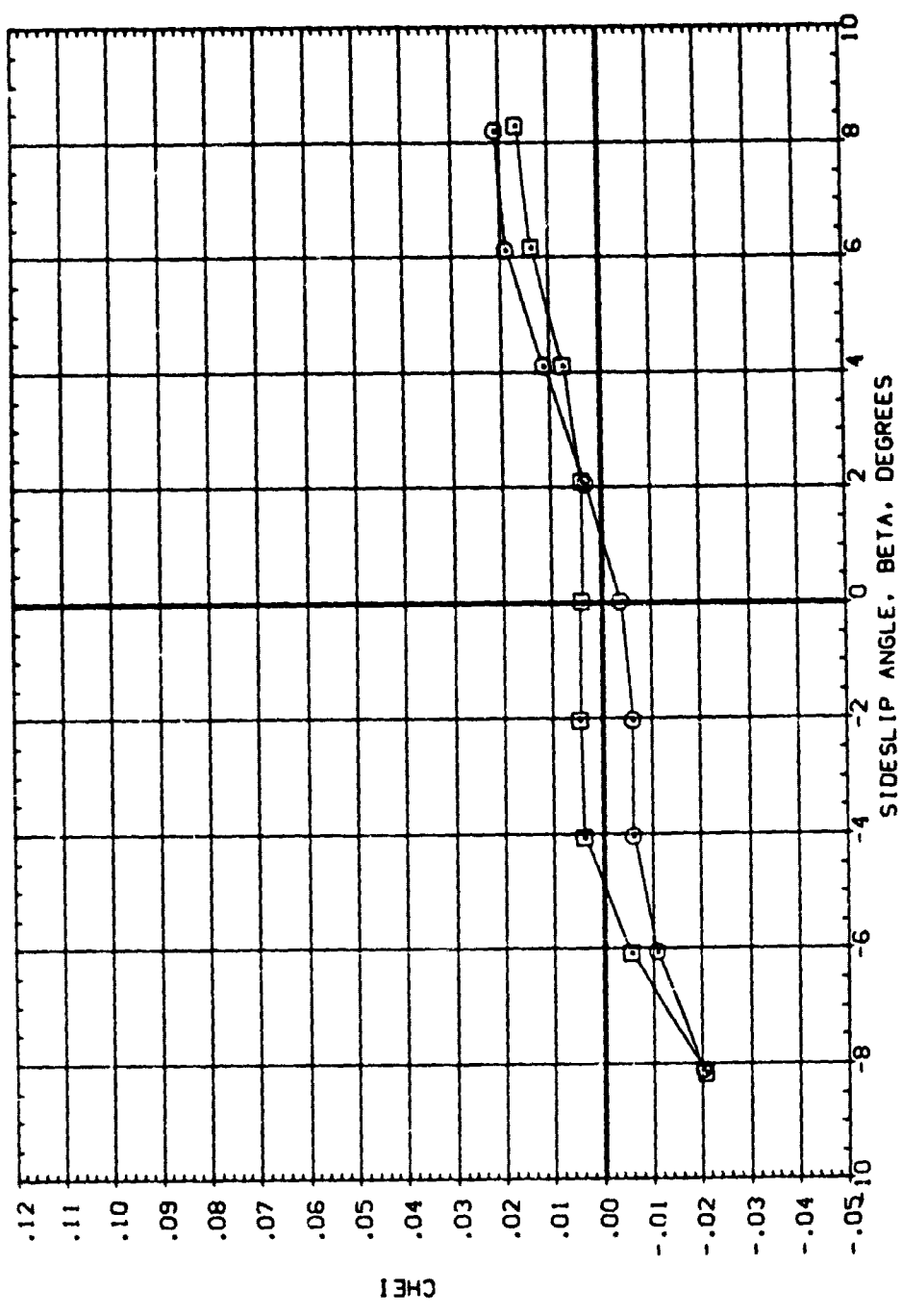
EFFECT OF REYNOLDS NUMBER

(B)MACH = .90

DATA SET SYMBOL: (FA2059) \square (FA2055)

CONFIGURATION DESCRIPTION: FA28. MSFC TWT 656. CONFIG. CONVEZPAPATT253
 FA28. MSFC TWT 656. CONFIG. CONVEZPAPATT353

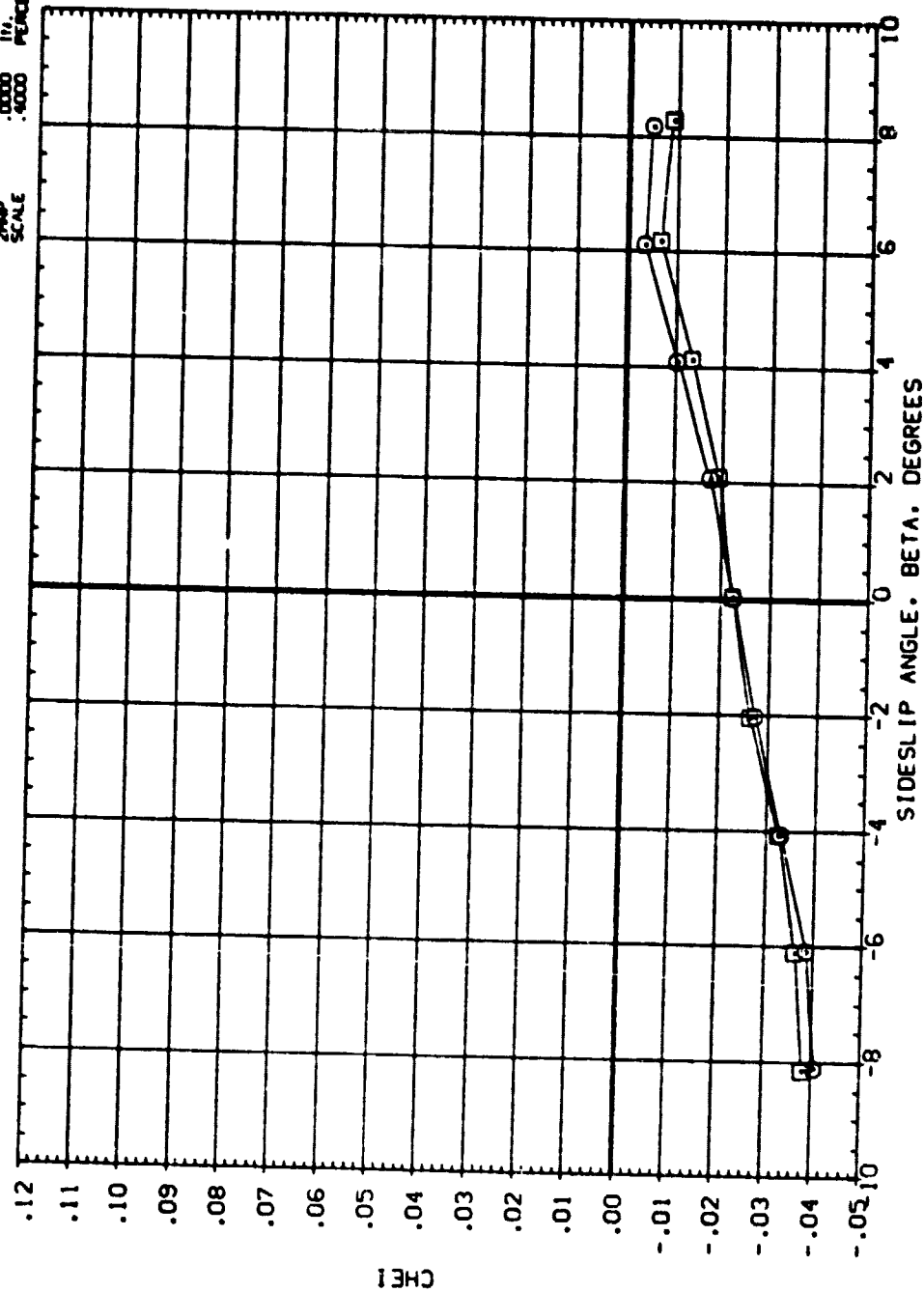
REFERENCE INFORMATION:
 SHEET 5.1880 SQ. IN.
 REF 5.1812 IN.
 REF 2.7473 IN.
 REF 2.7120 IN.
 WARP .0000 IN.
 WARP .0000 IN.
 SCALE 4000 PERCENT



EFFECT OF REYNOLDS NUMBER
 (C)MACH = 1.05

DATA SET SYMBOL: 8
 (FA2853) (FA2853)
 CONFIGURATION DESCRIPTION:
 FA28. MSFC 101 656. CONF IG. 02VZ220PAATT353
 FA28. MSFC 101 656. CONF IG. 02VZ220PAATT353

REFERENCE INFORMATION
 SREF 6.1580 50. IN
 LREF 5.1612 IN.
 BRCP 3.7770 IN.
 YMRP 2.7120 IN.
 ZMRP .0000 IN.
 SCALE .0000 IN.
 PEACEN 10.

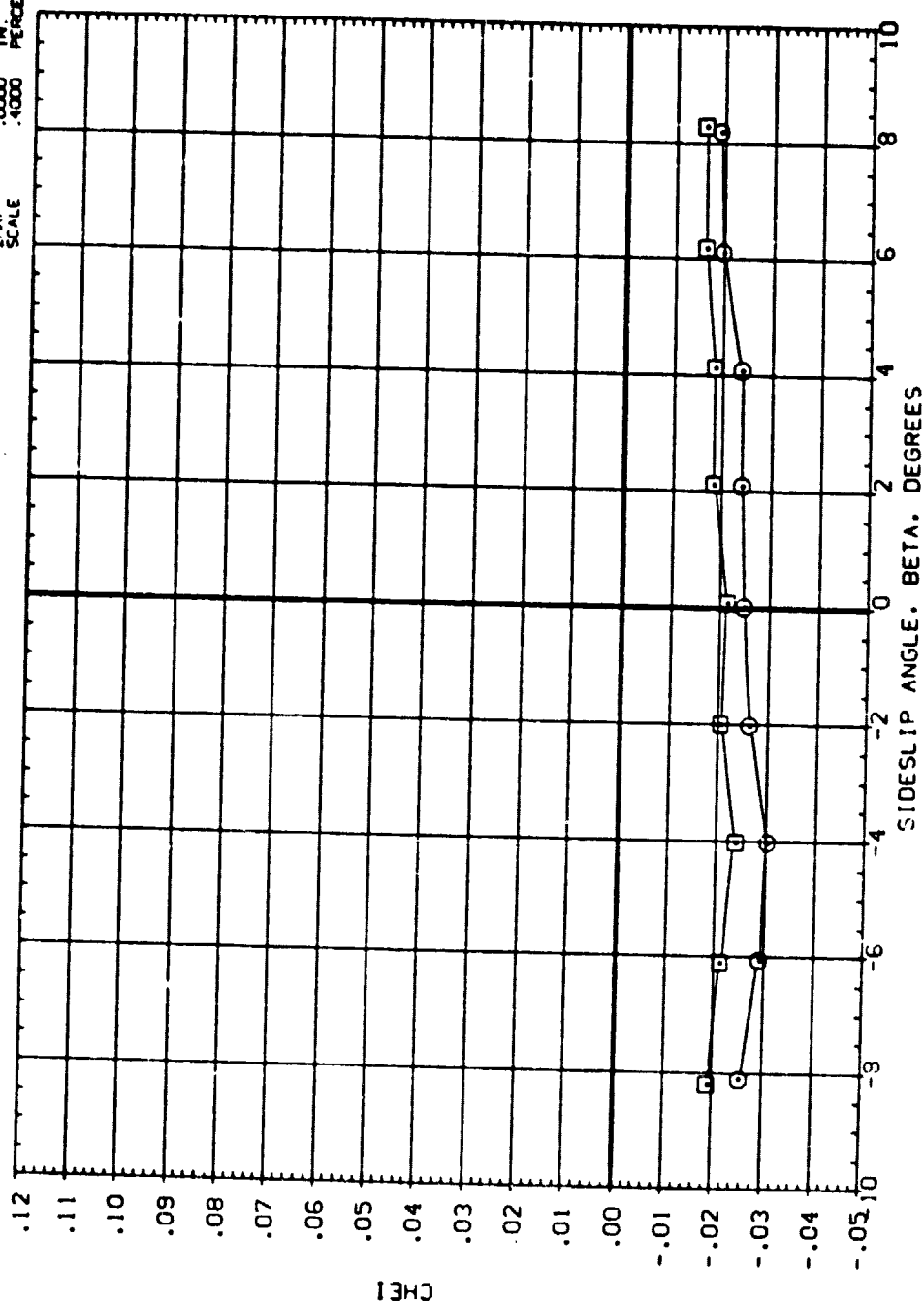


EFFECT OF REYNOLDS NUMBER

(O)MACH = 1.10

DATA SET SYMBOL: **□** CONFIGURATION DESCRIPTION:
 (FA2859) FA28. MSFC TWT 656. CONF IG. 02VCE2MPAATTJ53
 (FA2865) FA28. MSFC TWT 656. CONF IG. 02VCE2MPAATTJ53

REFERENCE INFORMATION
 SREF 6.1890 SQ. IN.
 LREF 3.1612 IN.
 BREF 2.7470 IN.
 XREF 2.7470 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE 4000 PERCENT

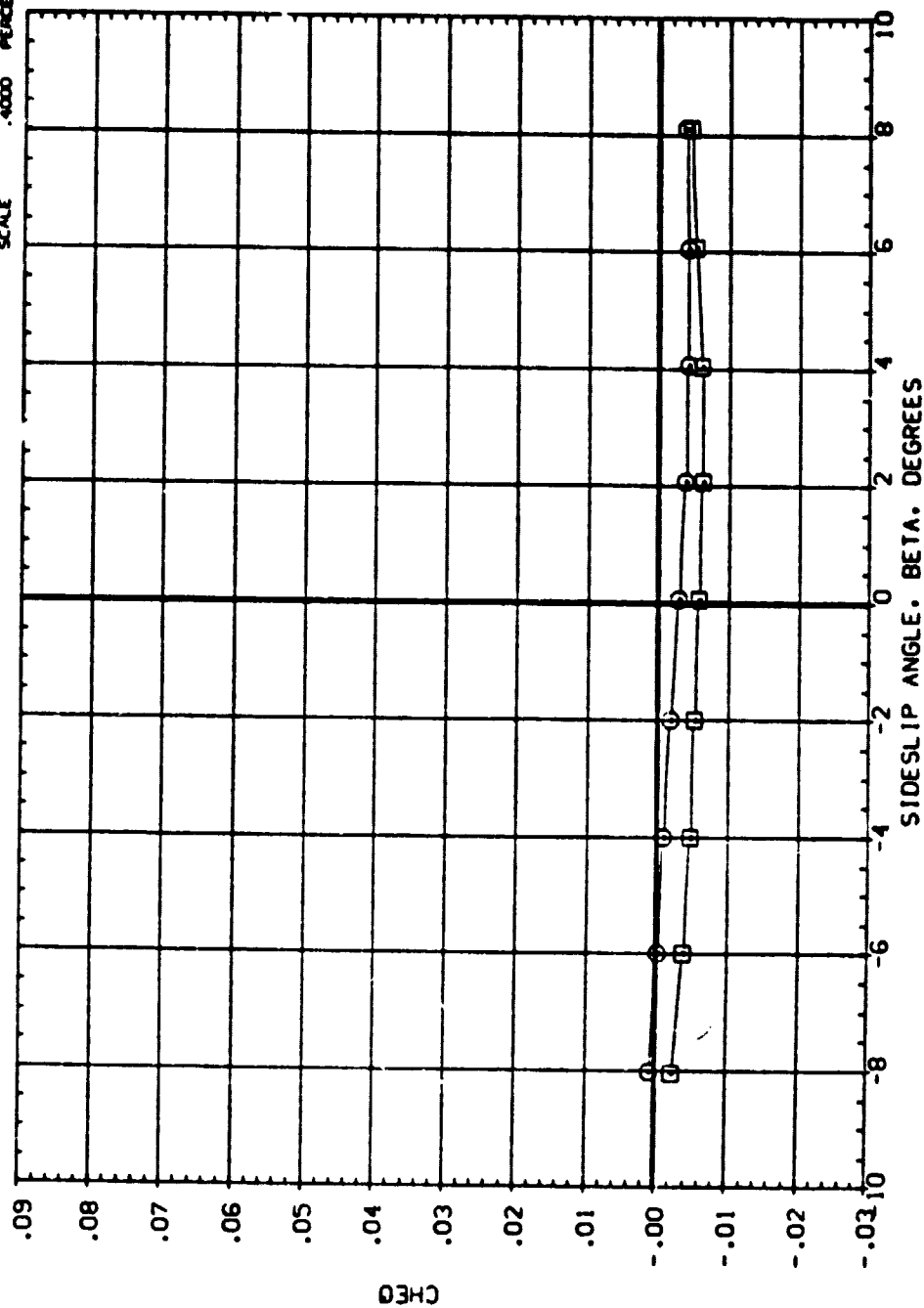


EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.25

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION:
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 (FA2053) FA20. MSFC TUT 656. CONF IG. CONVEZMPAAAT1753

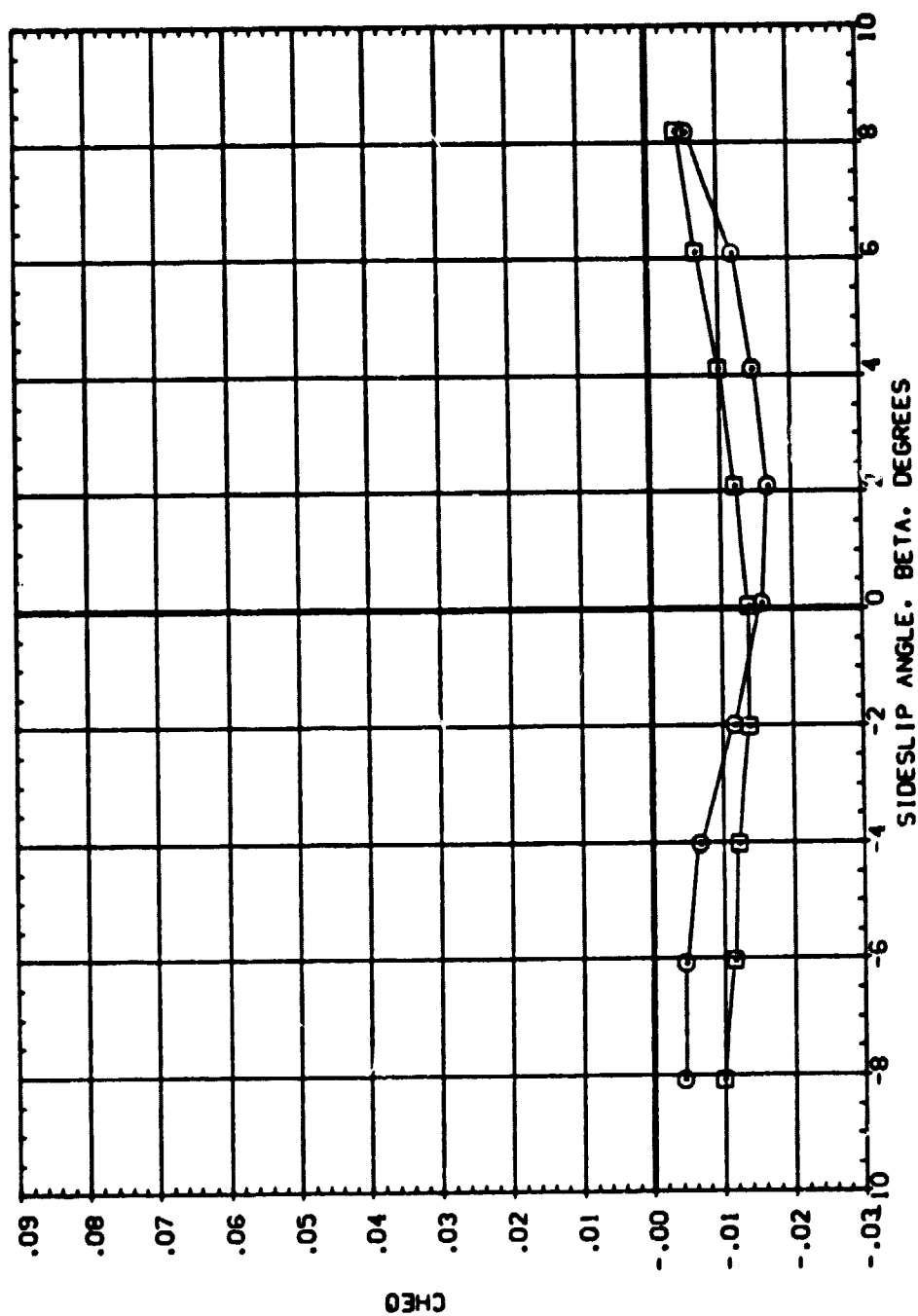
REFERENCE INFORMATION
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 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 FEET/IN.



EFFECT OF REYNOLDS NUMBER

(A) MACH = .60

REFERENCE INFORMATION	
SREF	6.1900 IN.
LINE	5.1612 IN.
SREF	3.7470 IN.
WREF	2.7120 IN.
WREF	.0000 IN.
ZREF	.0000 IN.
SCALE	.4000 PERIOD

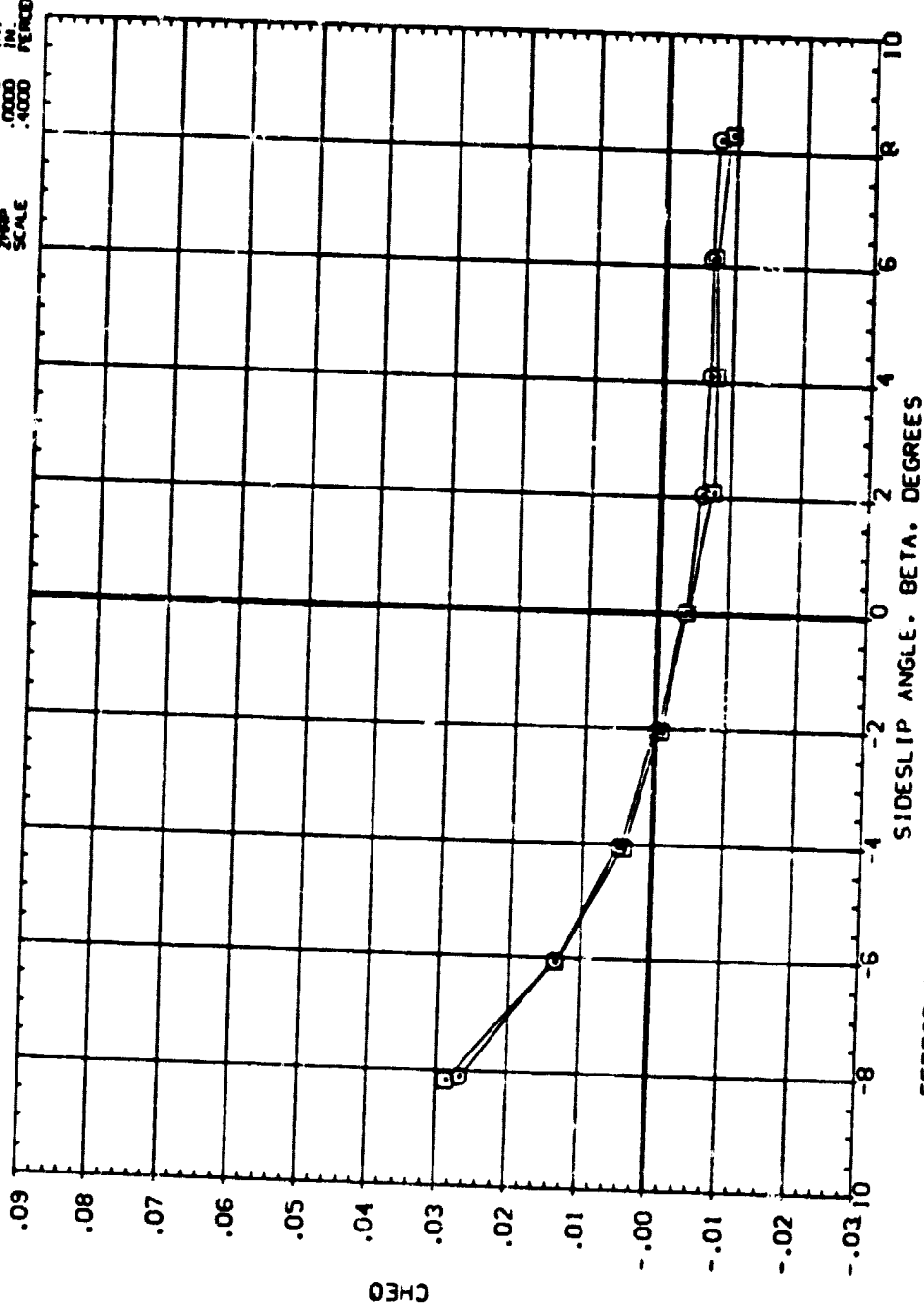


EFFECT OF REYNOLDS NUMBER

(8)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
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 (FA2853) 8 FA28. MSFC TUT 656. CONF IG. 0002E2MP0ATT353

REFERENCE INFORMATION
 SREF 8.1282 90. IN
 LREF 3.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 YREF .0000 IN.
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 SCALE .4000 PERCENT

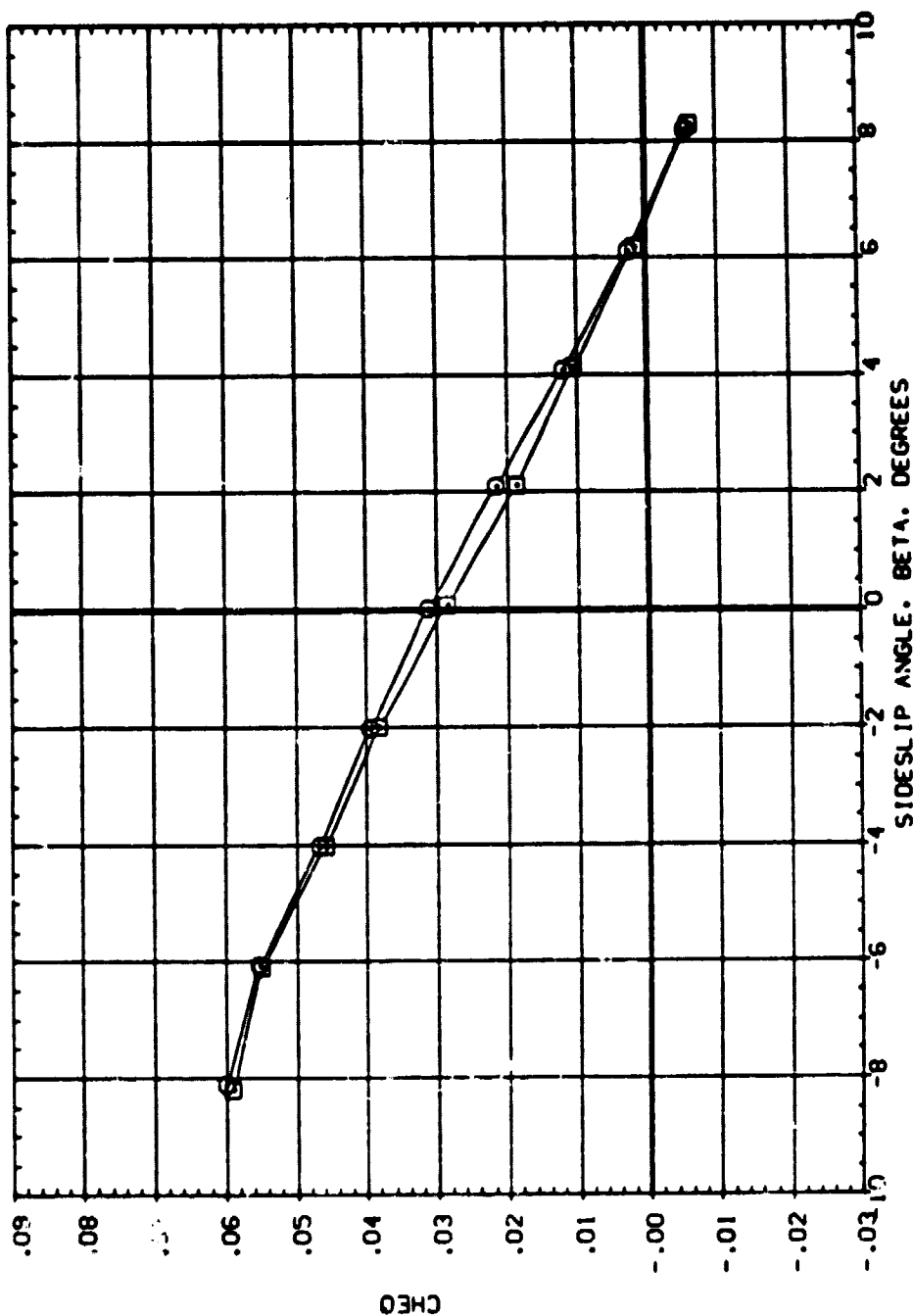


EFFECT OF REYNOLDS NUMBER
 (C)MACH = 1.05

DATA SET SYMBOL: 8
 (FA2659)
 (FA2655)

CONFIGURATION DESCRIPTION
 FA26. MPFC TWT 656. CONF IG. 00VZ2MPAA11253
 FA26. MPFC TWT 656. CONF IG. 00VZ2MPAA11353

REFERENCE INFORMATION
 SET 8.1500 90. IN
 LIFT 3.1612 IN.
 DRIFT 2.7470 IN.
 WIND 2.7120 IN.
 WAVE .0000 IN.
 WAT .0000 IN.
 SCALE .0000 PERCENT



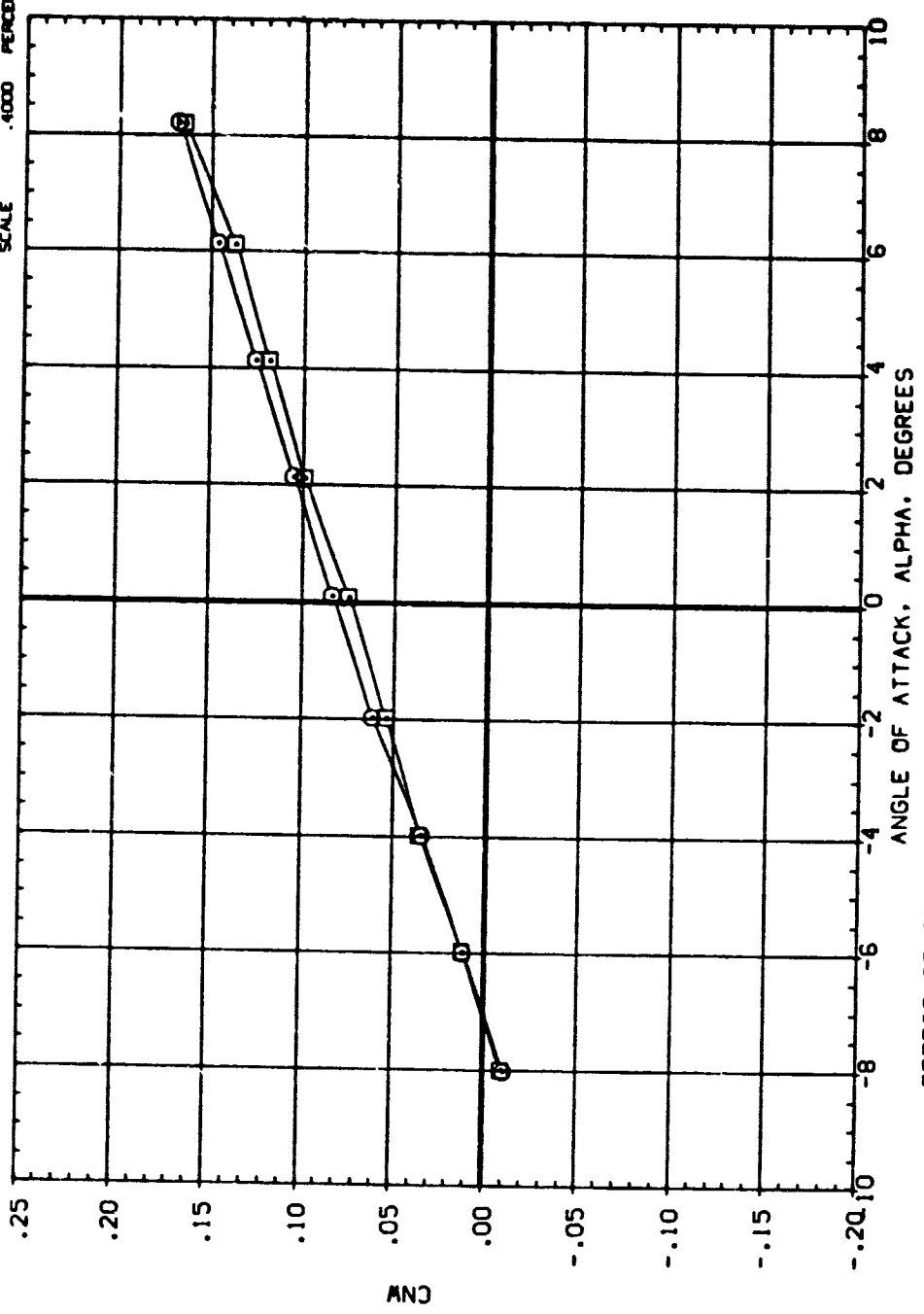
EFFECT OF REYNOLDS NUMBER

(E)MACH = 1.25

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION: FA28, MSFC TWT 656; CONF IG: 02V2E2PAPAT1353 OR (FA2859) FA28, MSFC TWT 656; CONF IG: 02V2E2PAPAT1353 OR

REFERENCE INFORMATION

	6.1980	50.	IN
SREF	5.1612	IN.	
LREF	3.7470	IN.	
BREF	2.7120	IN.	
ATRP	.0000	IN.	
YTRP	.0000	IN.	
ZTRP	.0000	IN.	
SCALE	.4000	PERCENT	



EFFECT OF GRIT ON WINGS

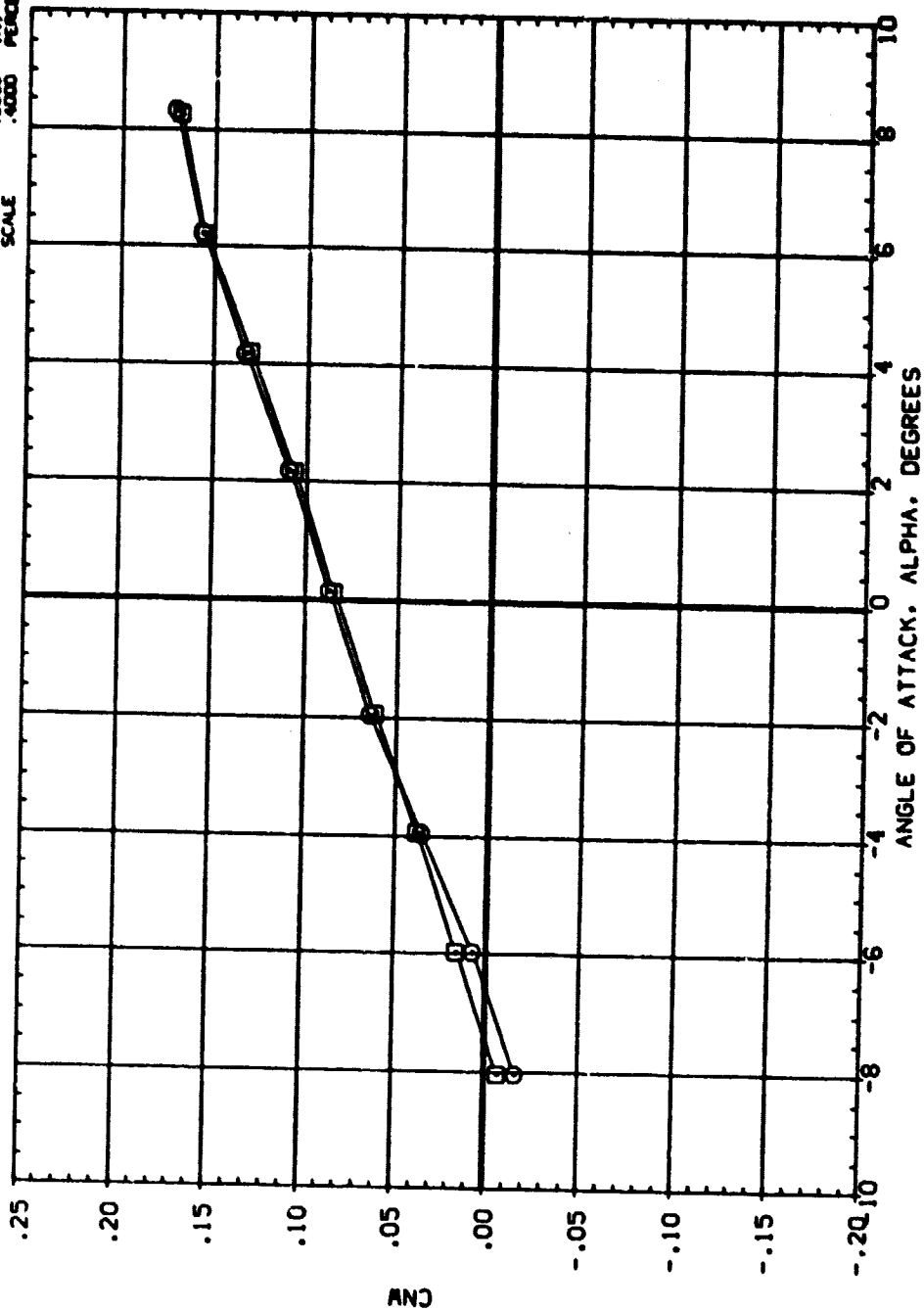
(A)MACH = .60

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C-9

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) □ FA28. MSC TWT 656. CONFIG. CONVEZMPAATT253 OF
 (FA2867) □ FA28. MSC TWT 656. CONFIG. CONVEZMPAATT253 OF

REFERENCE INFORMATION
 REF 6.1980 50. IN.
 LREF 3.1612 IN.
 BREF 2.7470 IN.
 WREF 2.7120 IN.
 ZREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

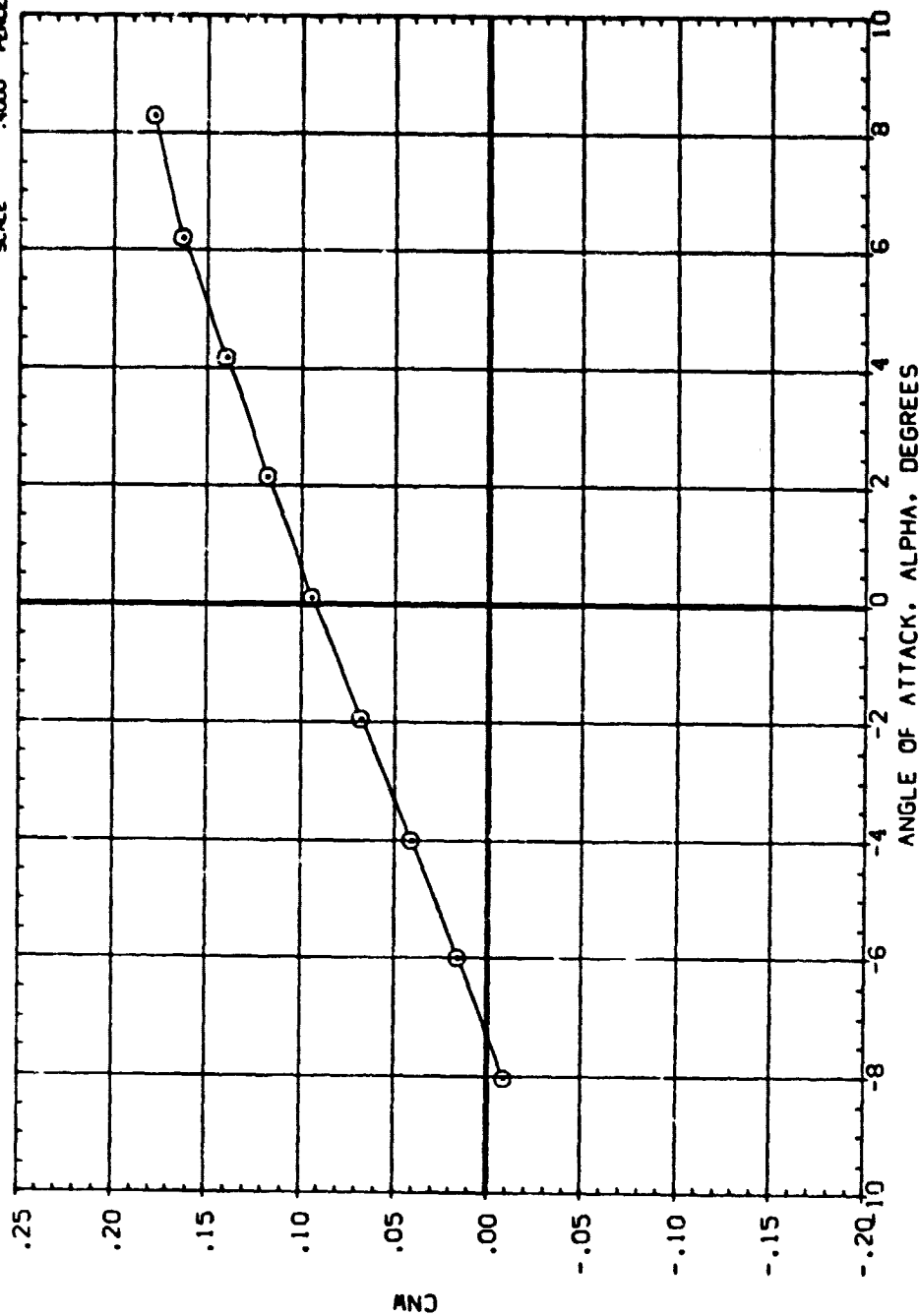


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION: FA20, M2C, TWT, 536, CONFIG. 02N2E20PANTTJ53
 (FA2058) (FA2067) DATA NOT AVAILABLE

REFERENCE INFORMATION
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 LREF 5.1612 IN.
 WREF 3.7470 IN.
 VREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

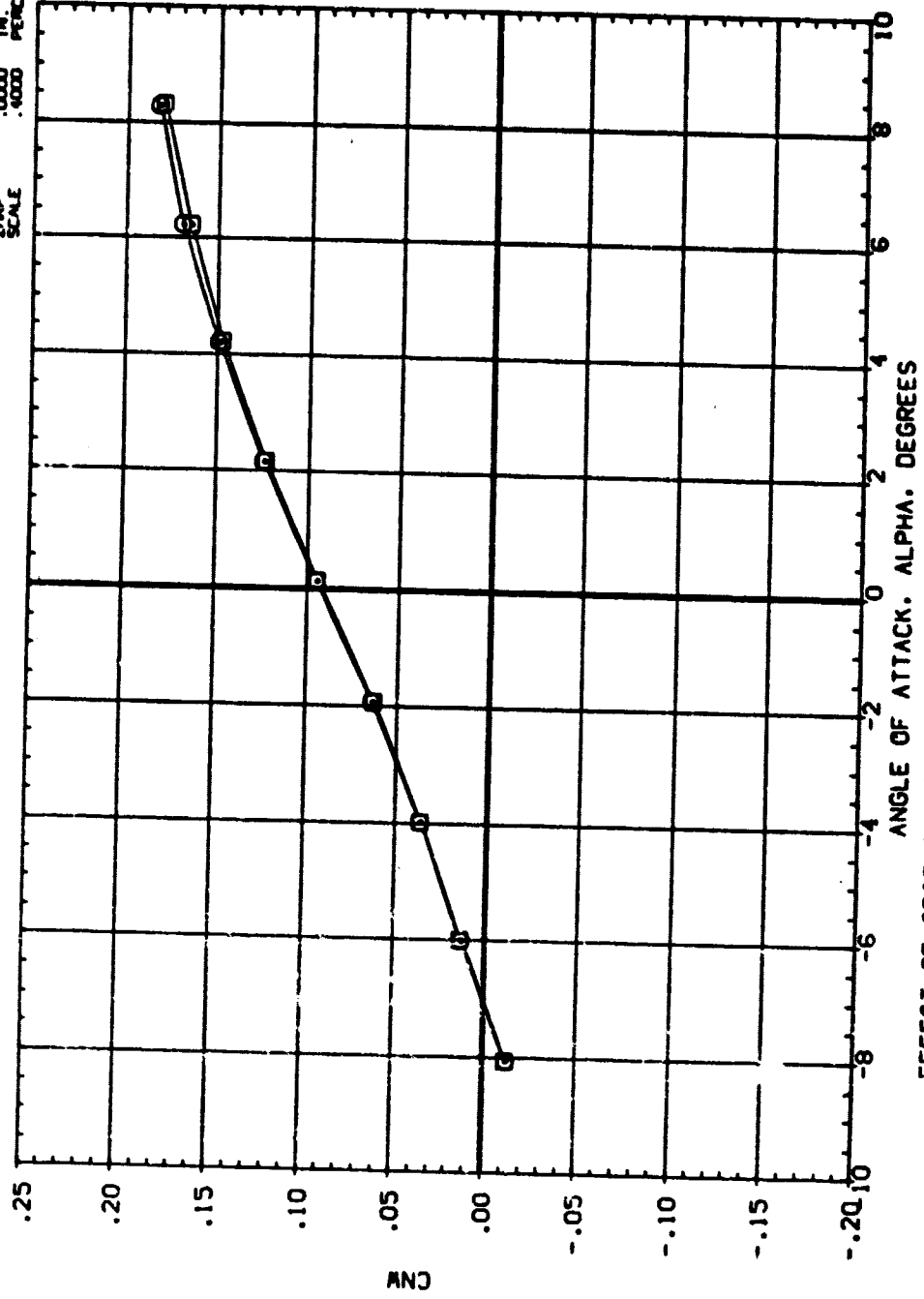


EFFECT OF GRIT ON WINGS

(C)MACH = .95


DATA SET SYMBOL: 8
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 FA28, MSC TVT 656, CONFIG. 02VZ23PAA11353 OR

REFERENCE INFORMATION:
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 WREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT

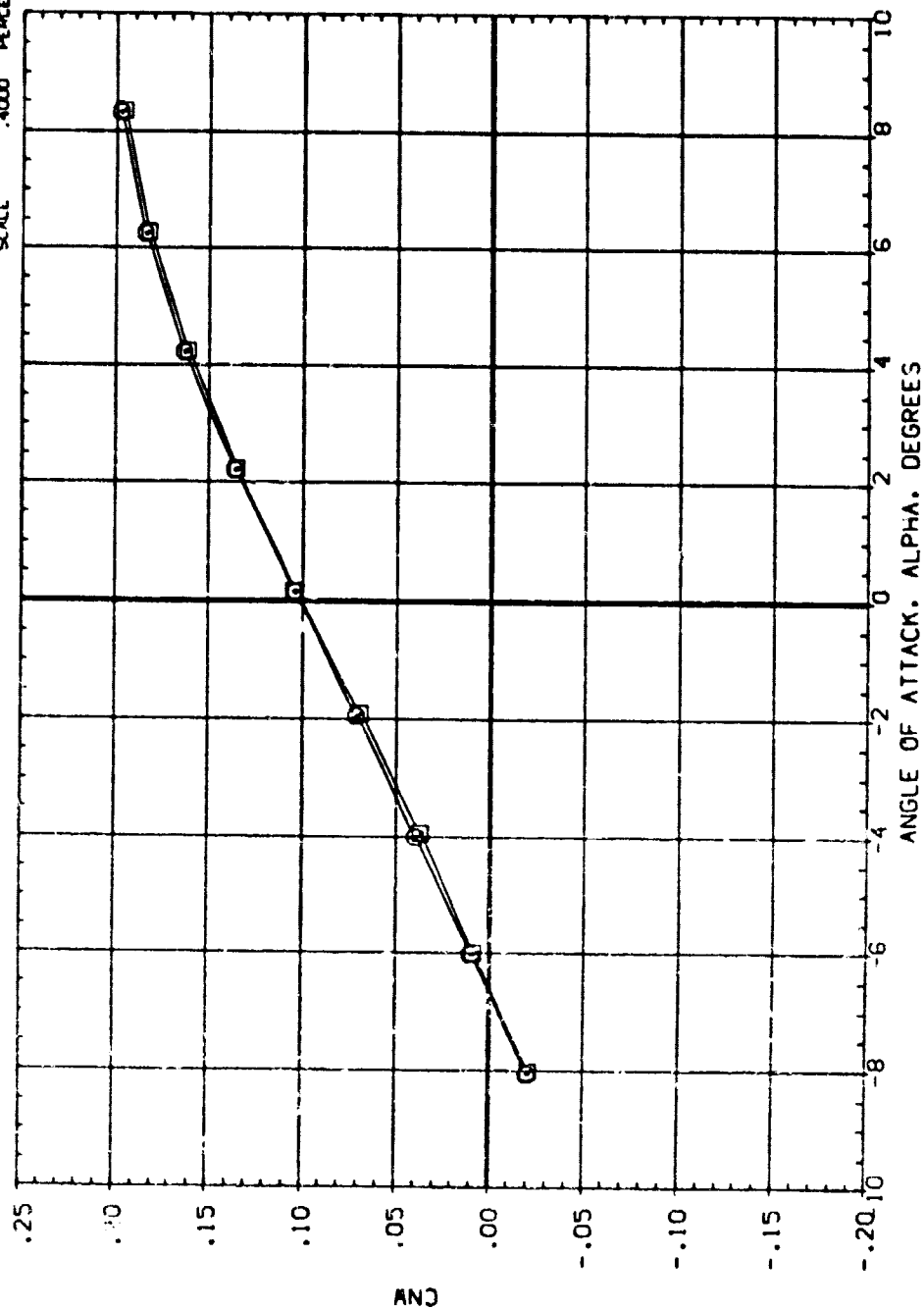


EFFECT OF GRIT ON WINGS

(D)MACH = 1.05

DATA SET SYMBOL: (FA2858) (FA2867)  CONFIGURATION DESCRIPTION: FA28, MSFC TWT 656, CONF G, 02N2E20N6-ATT353 OR FA28, MSFC TWT 656, CONF G, 02N2E20N6-ATT353 OR

REFERENCE INFORMATION
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 BREF 3 7470 IN
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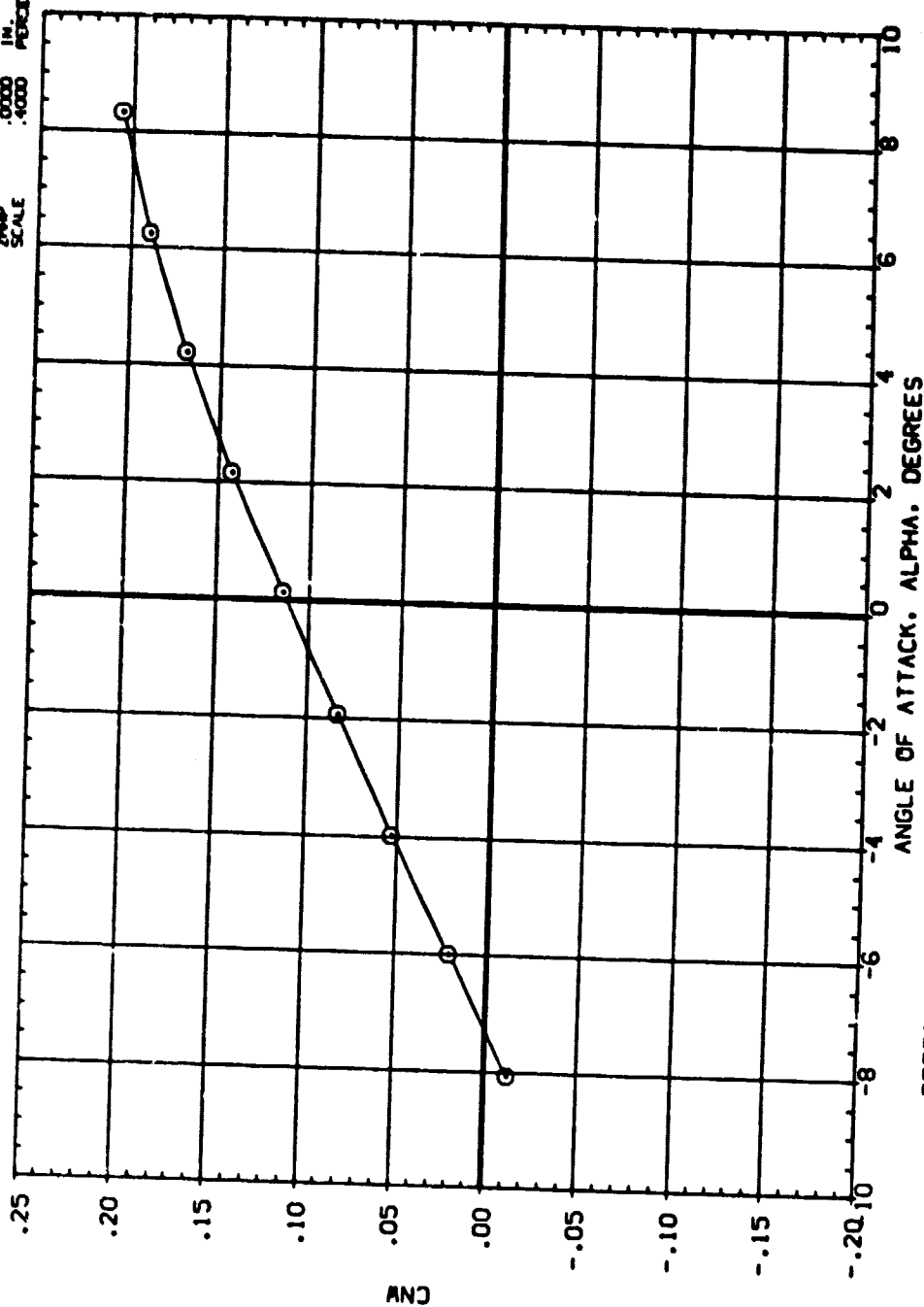


EFFECT OF GRIT ON WINGS

(E)MACH = 1.10

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FA2858) □ FA28. MSFC TWT 656. CONFIG. 02VZ2P0AATT733
 (FA2857) □ DATA NOT AVAILABLE

REFERENCE INFORMATION
 REF 6.1580 SQ. IN.
 WREF 3.1612 IN.
 WREF 2.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERIOD

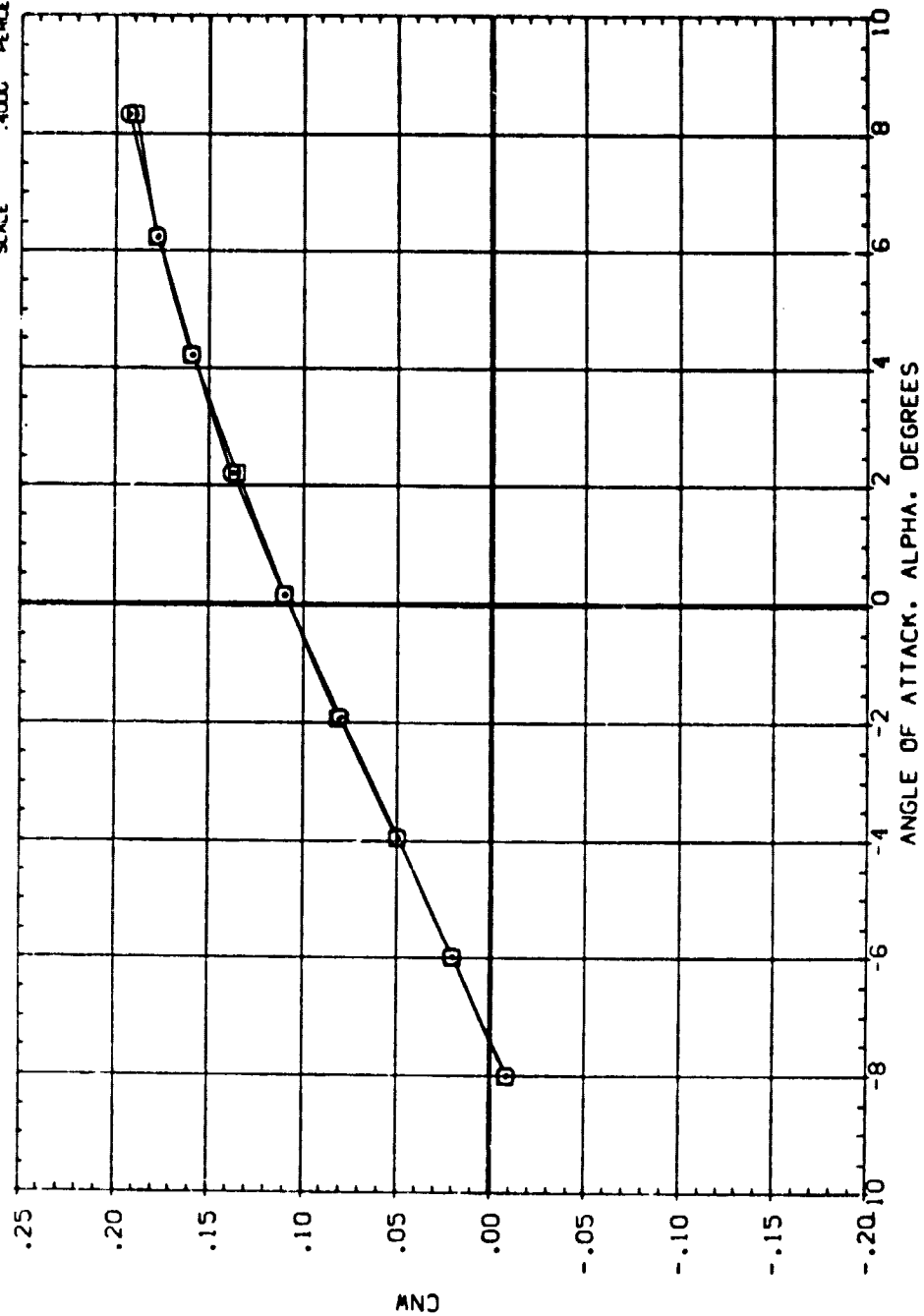


EFFECT OF GRIT ON WINGS

(F)MACH = 1.15

DATA SET SYMBOL: \square CONFIGURATION DESCRIPTION:
 (FA2859) FA28. MSCC 1WT 656. CONF IG. 02VZ22NPAAT1353
 (FA2867) FA28. MSCC 1WT 656. CONF IG. 02VZ22NPAAT1353 OR

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

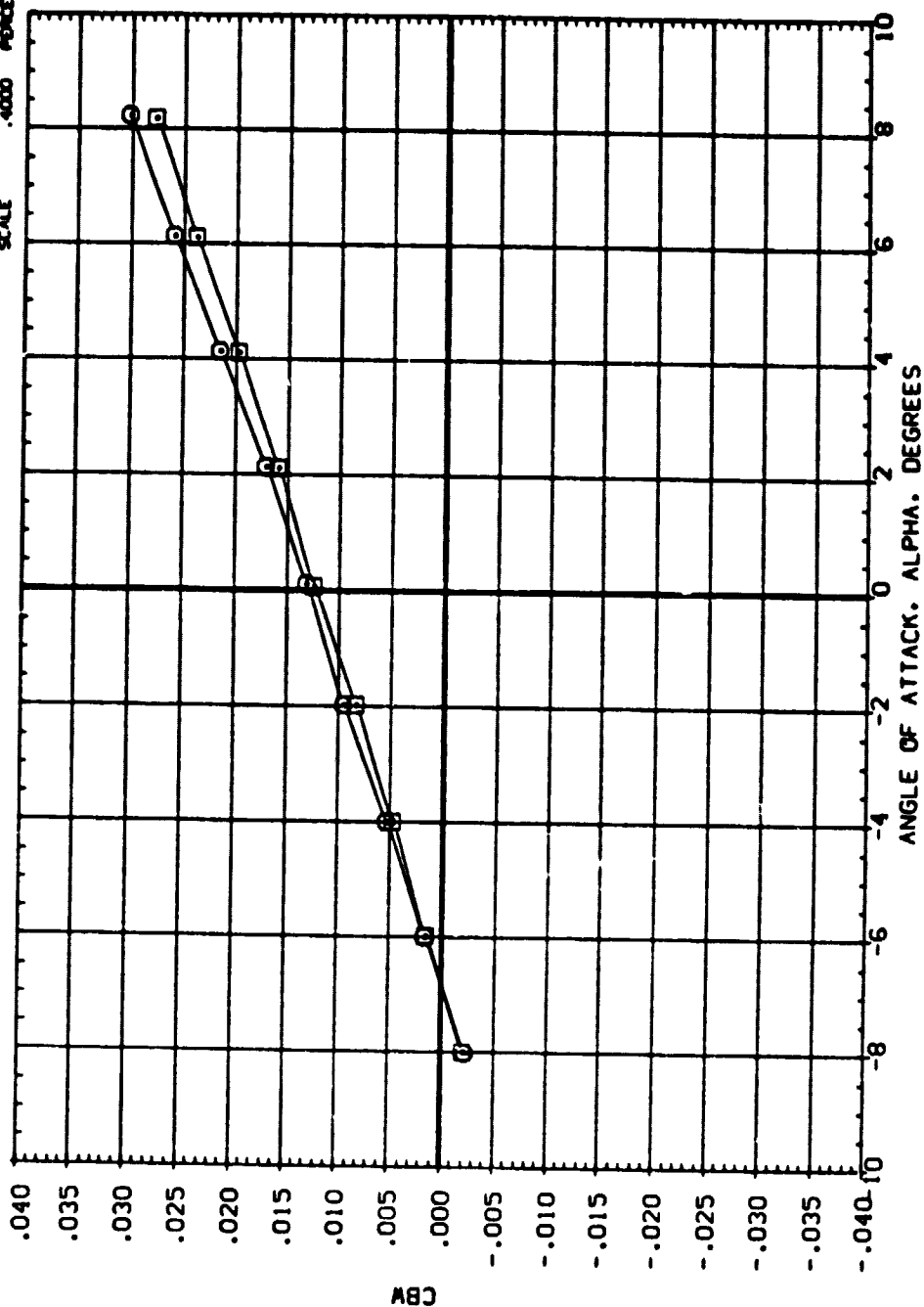


EFFECT OF GRIT ON WINGS

(G)MACH = 1.25

DATA SET SYMBOL: FA28. HSC TVT 656. CONFIG. 02VZ2PMPA11753
 (FA2658) □ FA28. HSC TVT 656. CONFIG. 02VZ2PMPA11753 OF

REFERENCE INFORMATION
 REF: 6.1880 IN.
 LREF: 3.1612 IN.
 BREF: 2.7176 IN.
 WREF: 2.7120 IN.
 VREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .4000 PERCENT

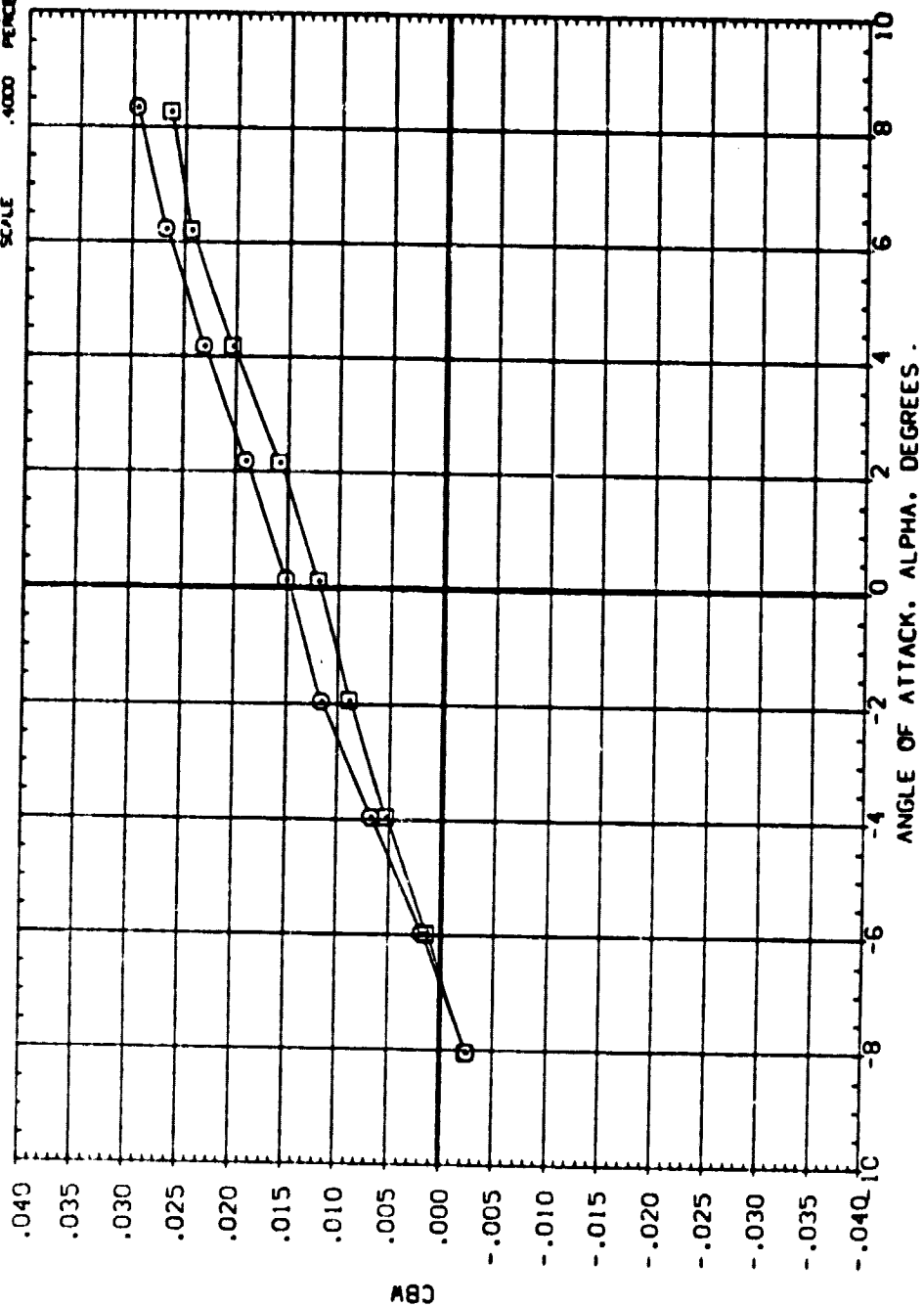


EFFECT OF GRIT ON WINGS

(A)MACH = .60

DATA SET SYMBOL: **CONF** IGRATION DESCRIPTION
 (FA2659) **FA28. MSFC TVT 656. CONF 10. DOWZEPMAIT1353**
 (FA2667) **FA28. MSFC TVT 656. CONF 10. DOWZEPMAIT1353 GR**

REFERENCE INFORMATION
 SREF 5.1580 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

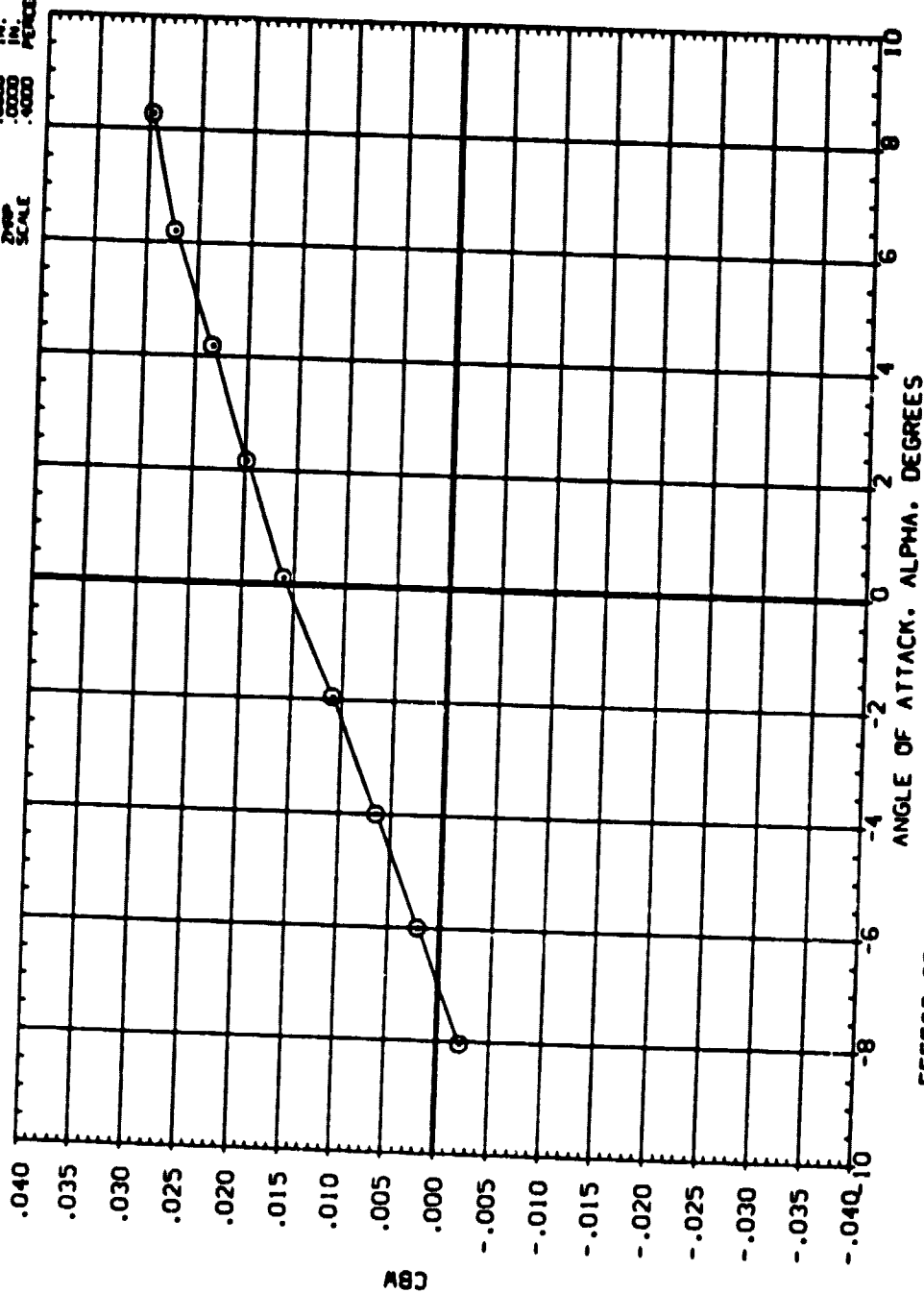


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA3858) PAGE: MSFC TVT GSE. CONFIG. G07E2M04A17353
 (FA3857) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SPOT 6.1980 SQ. IN.
 LIFT 3.1612 IN.
 DRAG 3.2470 IN.
 YPRP 2.7120 IN.
 ZPRP .0000 IN.
 SCALE .0000 POUND

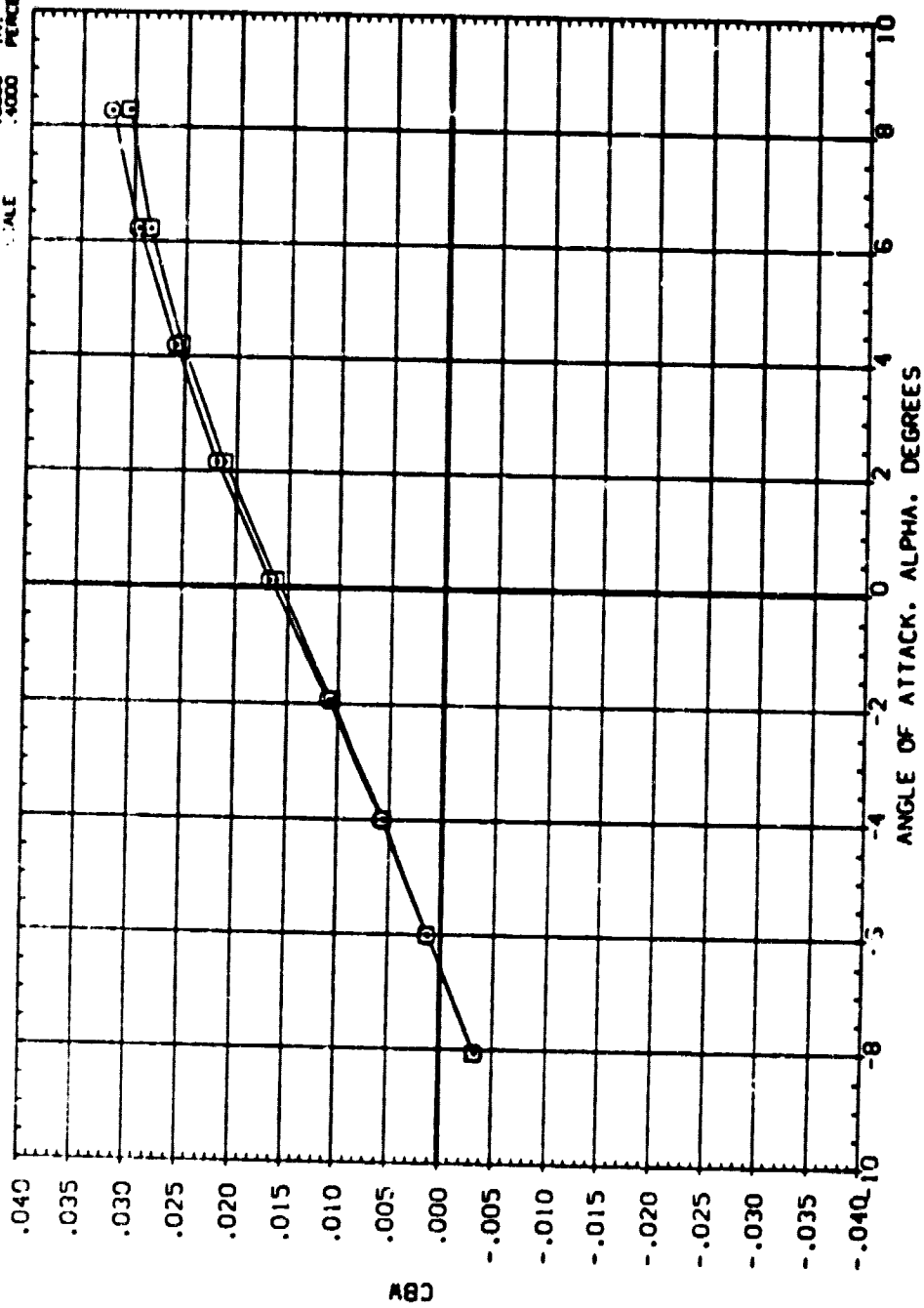


EFFECT OF GRIT ON WINGS

(C)MACH = .95

DATA SET SYMBOL: **CONF** CONFIGURATION DESCRIPTION
 (FA2058) **FA20. MSFC TWT 656. CONF IG. 60VZ2P4P1153**
 (FA2057) **FA20. MSFC TWT 656. CONF IG. 60VZ2P4P1153** OR

REFERENCE INFORMATION
 SREF 0.1980 IN.
 LREF 5.1617 IN.
 BREF 2.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 SCALE .4000 PERCENT

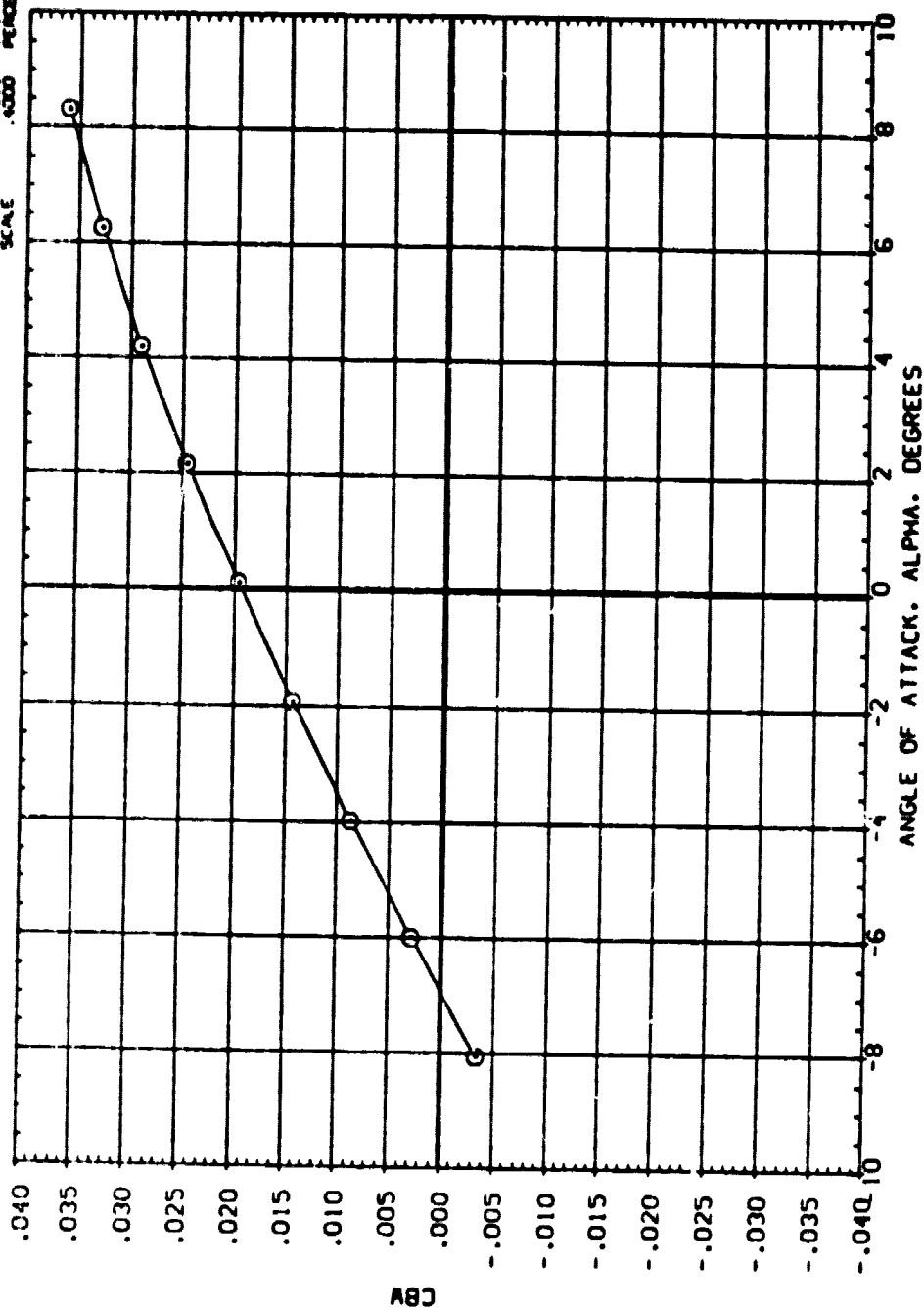


EFFECT OF GRIT ON WINGS

(O) MACH = 1.05

DATA SET SYMBOL: **CONFIDENCE DESCRIPTION**
 (FA2858) **FA28- MFC TWT 556- CONFIG. CONFIDENCE**
 (FA2857) **DATA NOT AVAILABLE**

REFERENCE INFORMATION
 SET 6.1580 50. IN
 REF 5.1612 IN
 REF 3.7470 IN
 REF 2.7120 IN
 REF .0000 IN
 REF .0000 IN
 SCALE .0000 PEAKEN

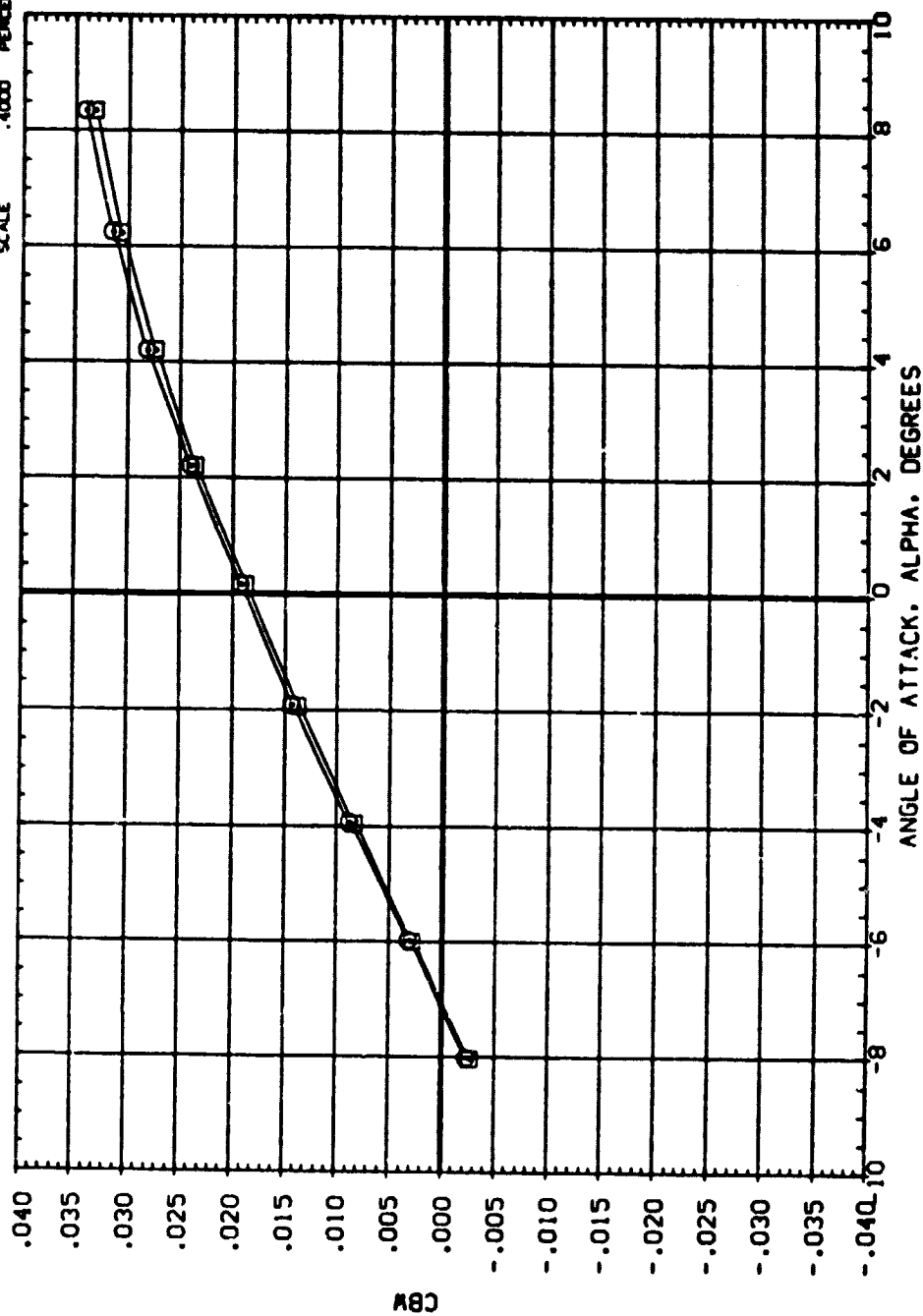


EFFECT OF GRIT ON WINGS

(F)MACH = 1.15

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) □ FA28. MFC INT 656. CONFIG. 02VZ22PMAATT353
 (FA2857) □ FA28. MFC INT 656. CONFIG. 02VZ22PMAATT353 OR

REFERENCE INFORMATION
 SREF 5.1980 IN.
 LREF 5.1512 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

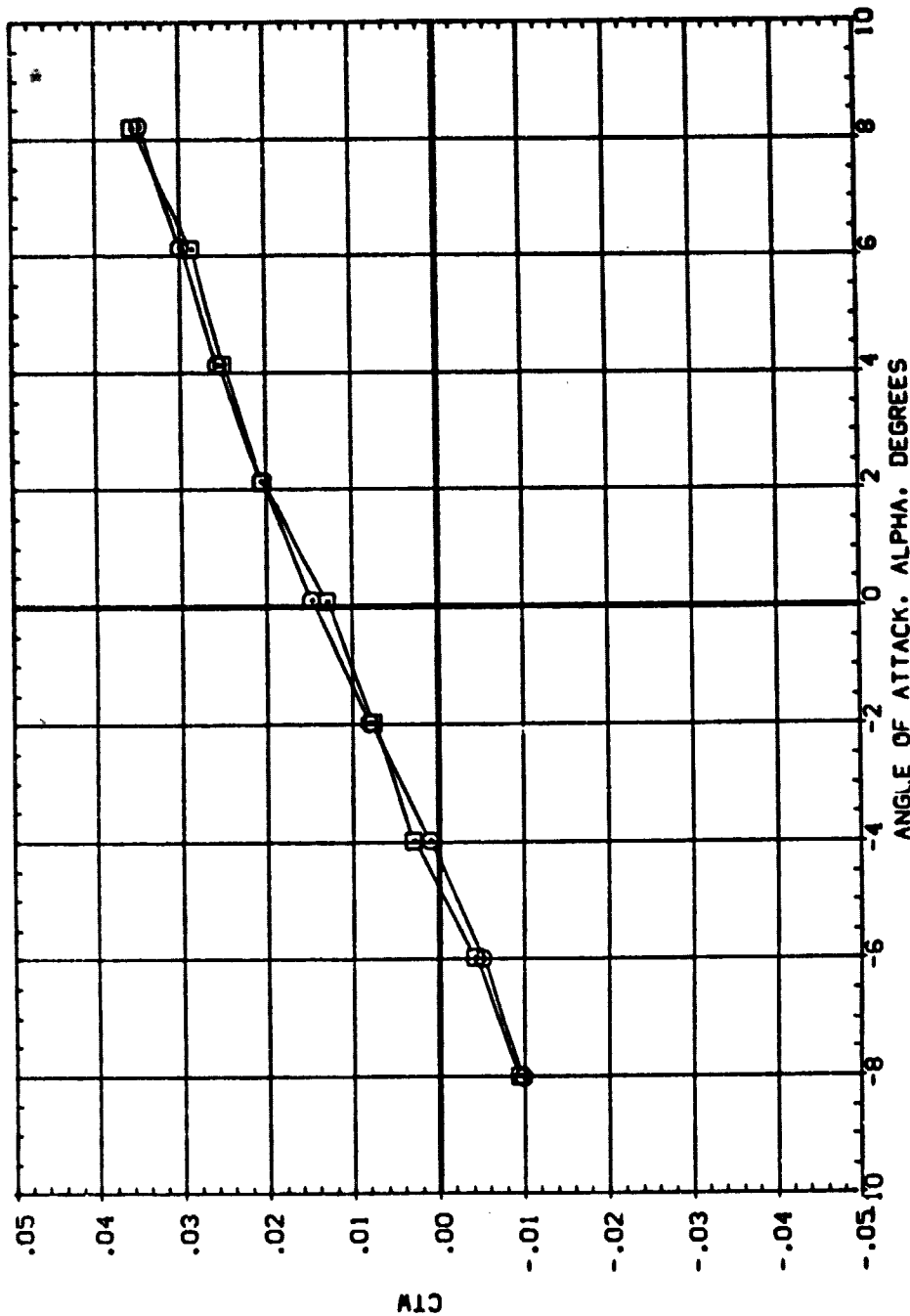


EFFECT OF GRIT ON WINGS

(G)MACH = 1.25

DATA SET SYMBOL: CONF 1G RATION DESCRIPTION
 (FA2858) □ FA28. MSC TVT 656. CONF 1G. SCVZ2PAPAT1333 OR
 (FA2867) □ FA28. MSC TVT 656. CONF 1G. SCVZ2PAPAT1333 OR

REFERENCE INFORMATION
 SHEET 6.1980 50. IN.
 LAST 5.1612 IN.
 DREF 2.7470 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

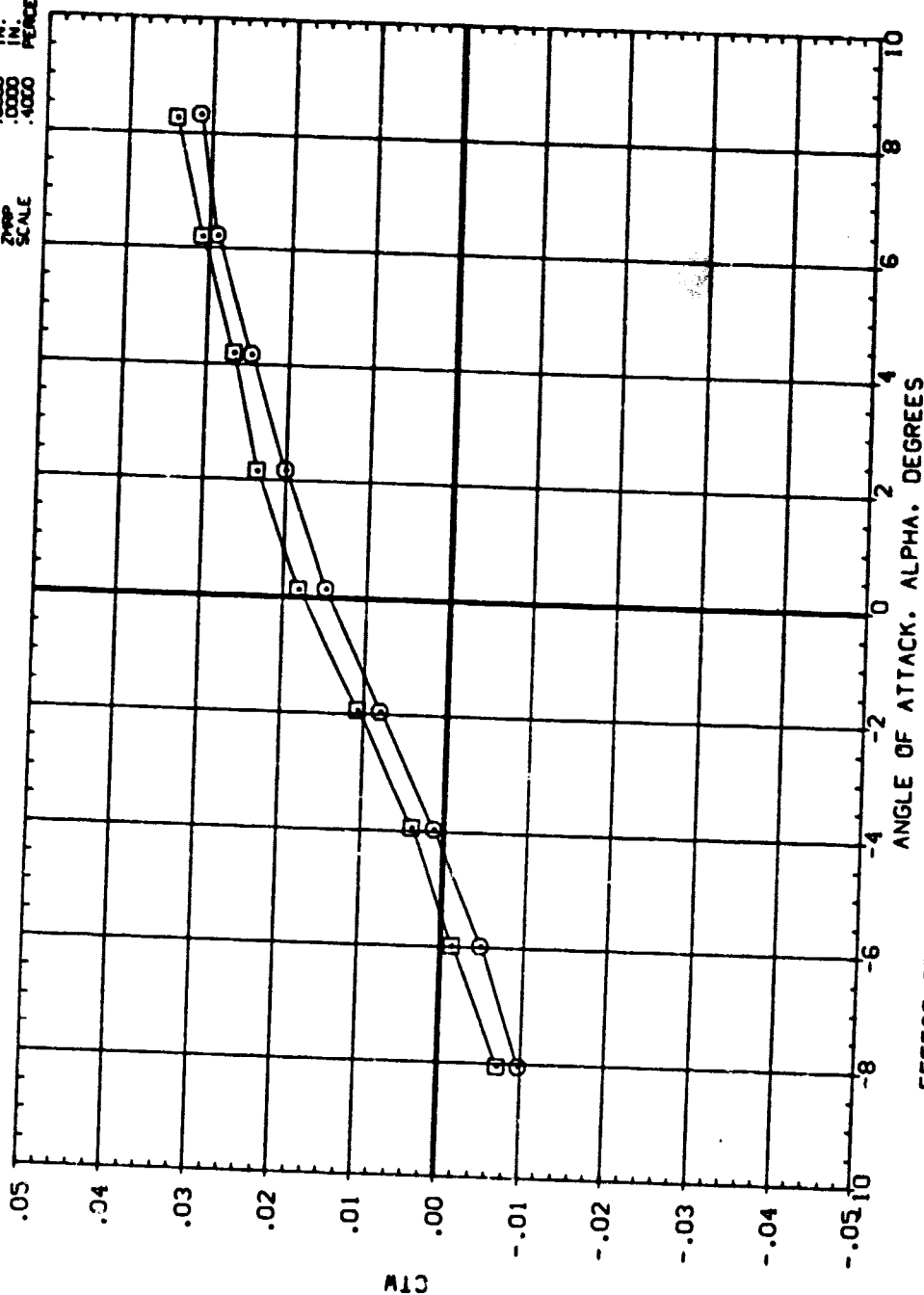


EFFECT OF GRIT ON WINGS

(A)MACH = .60

DATA SET SYMBOL: CONF. IQUATION DESCRIPTION
 (FA2856) (FA2857) FA28. MSFC TVT 656. CONF. IG. 02VZ22P0A11353 OR
 FA28. MSFC TVT 656. CONF. IG. 02VZ22P0A11353 OR

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 WREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT

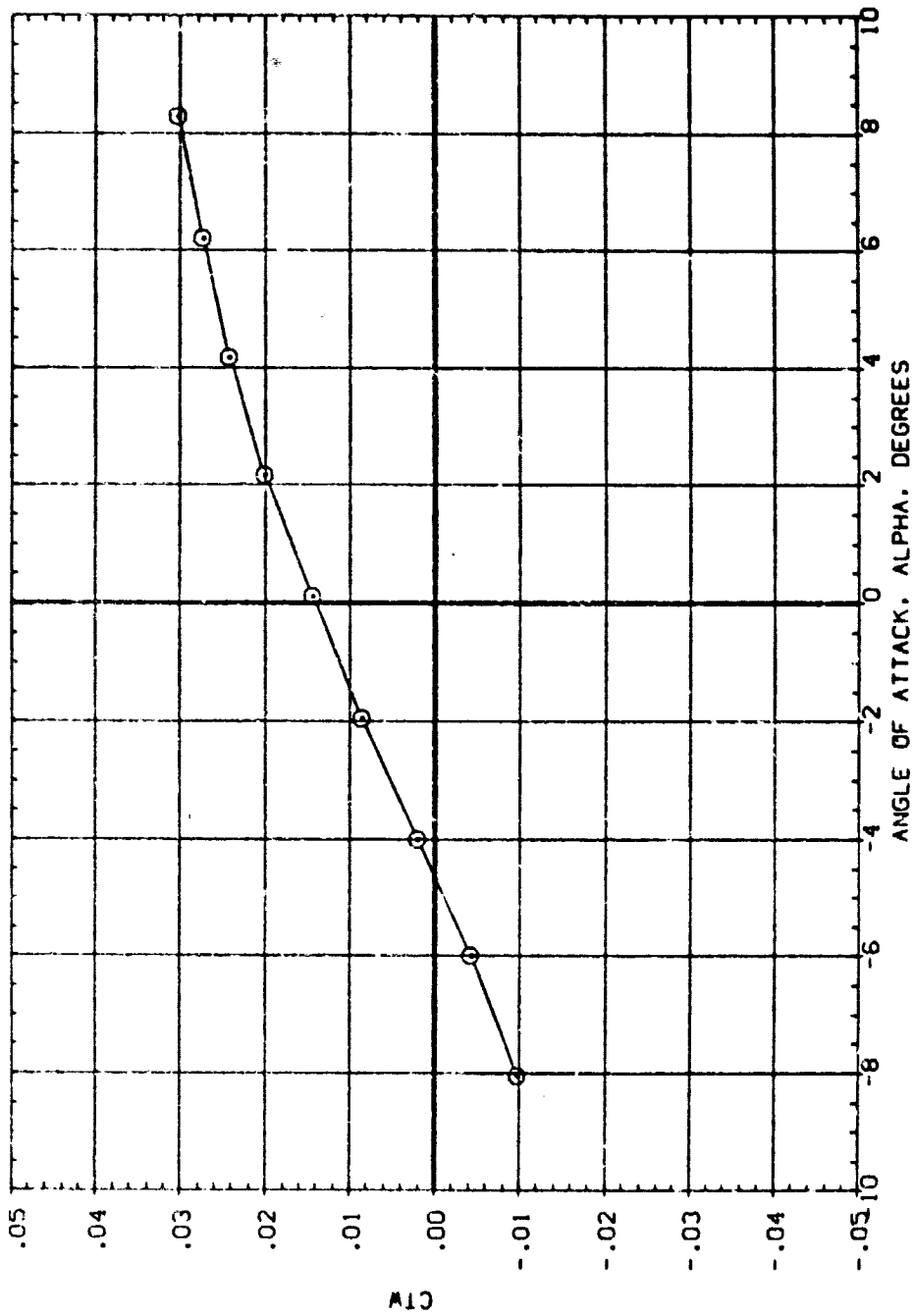


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2858) FA28. MSCC INT 656. CONFIG. 02V2E24PAATTJ53
 (FA2857) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YAMP 2.7120 IN.
 ZAMP .0000 IN.
 SCALE .4000 PERCENT

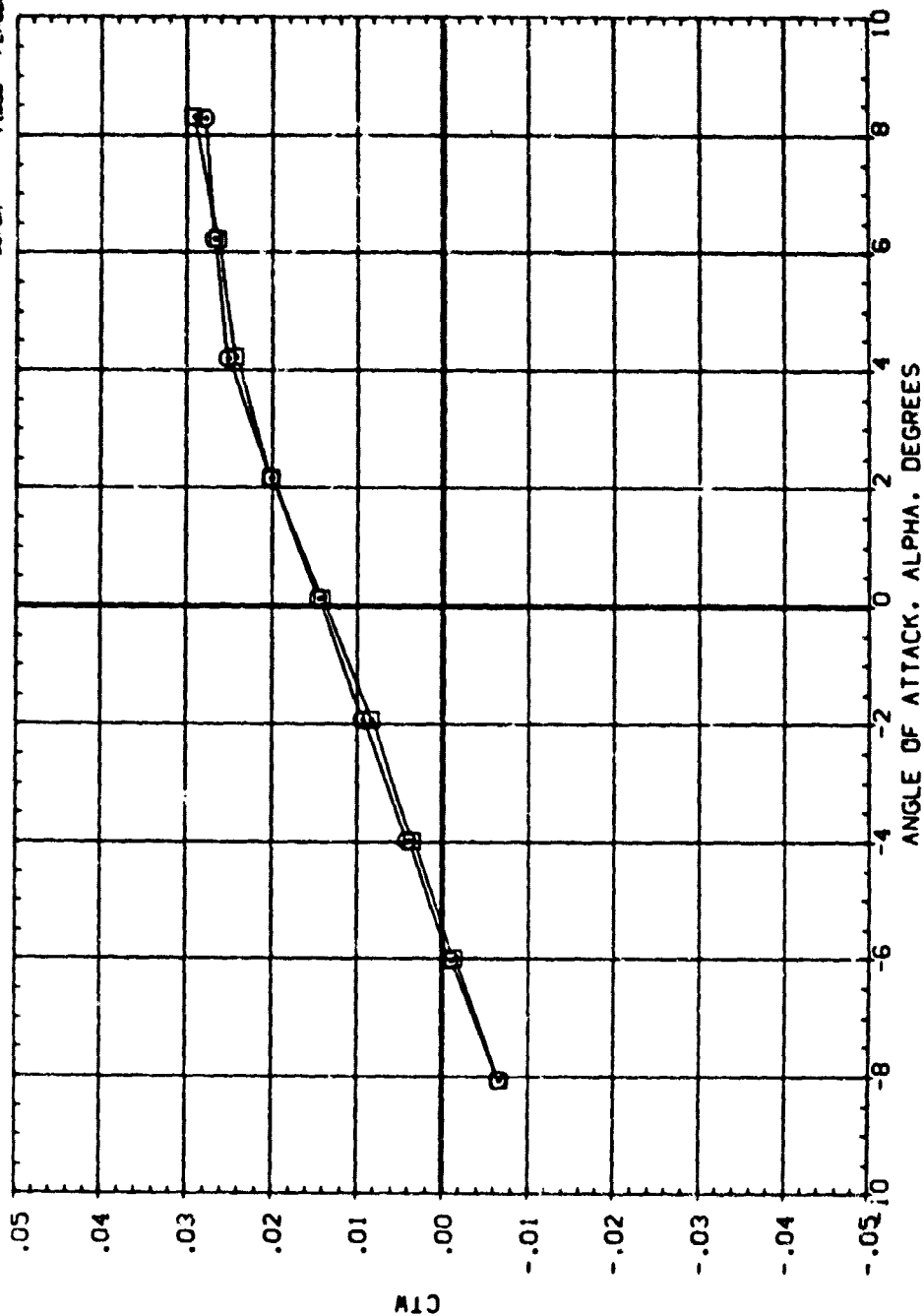


EFFECT OF GRIT ON WINGS

(C)MACH = .95

DATA SET SYMBOL: 8
 (FA2858) (FA2857)
 CONFIGURATION DESCRIPTION:
 FA28. MSFC TWT 856. CONFIG. 02VZ2PAA1T353 OR
 FA28. MSFC TWT 856. CONFIG. 02VZ2PAA1T353 OR

REFERENCE INFORMATION
 CASE: 6.1980 IN.
 LIFT: 5.1612 IN.
 DRIFT: 3.7470 IN.
 YARP: 2.7120 IN.
 ZARP: .0000 IN.
 SCALE: .4000 PERCENT

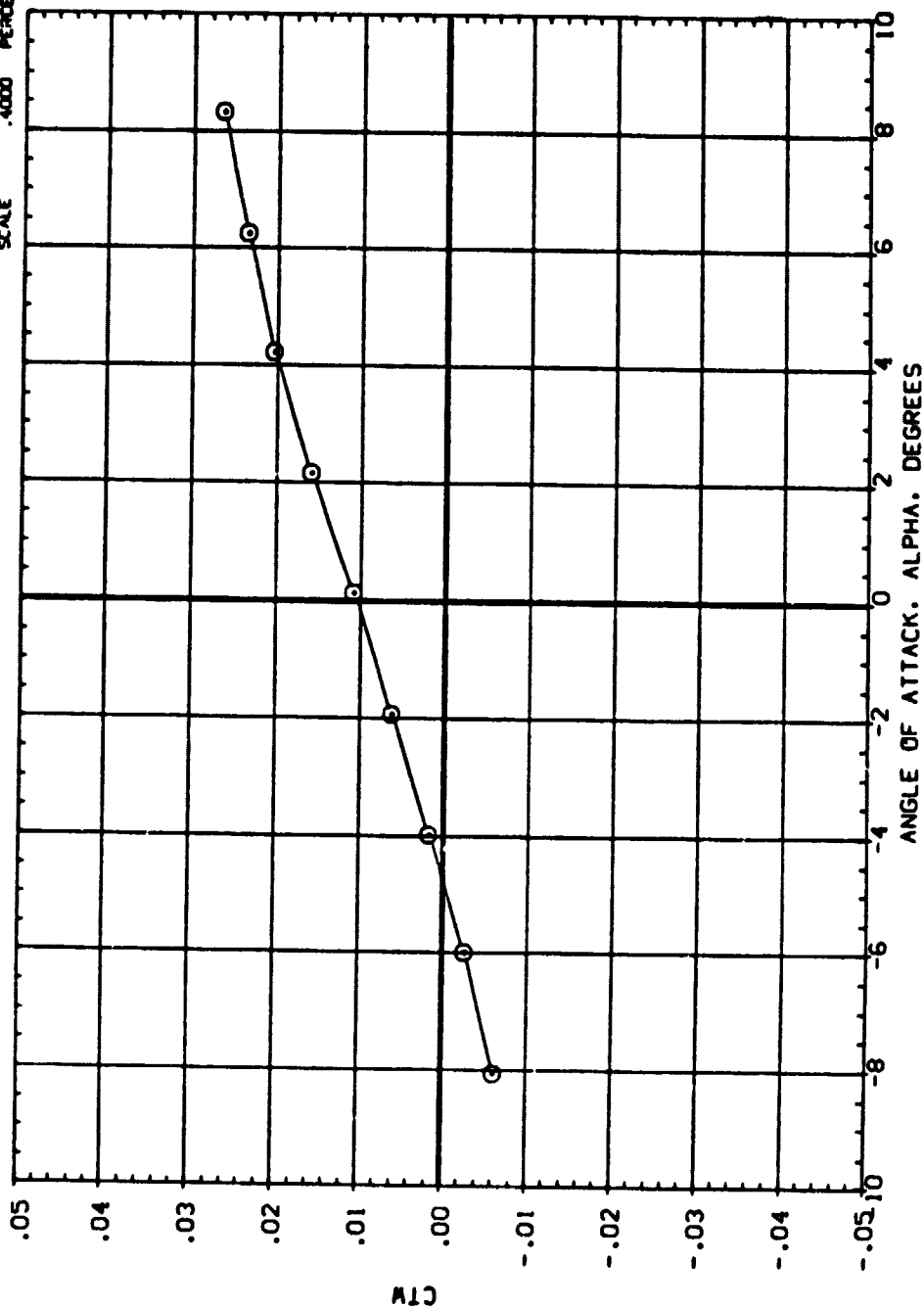


EFFECT OF GRIT ON WINGS

(0)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) FA28. MSFC TWT 656, CONFIG. 00V2E2RPA11353
 (FA2867) DATA NOT AVAILABLE

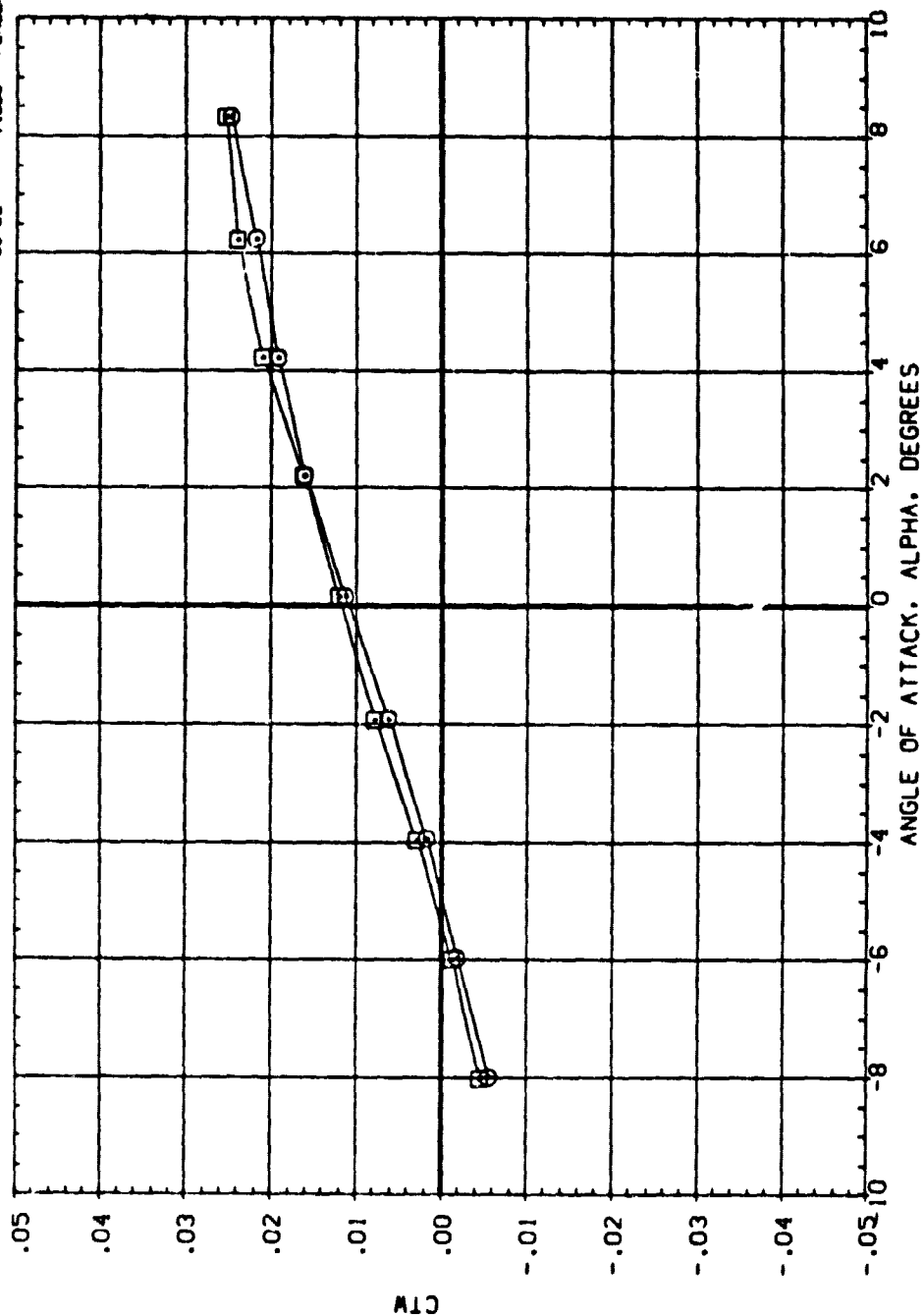
REFERENCE INFORMATION
 SREF 8.1980 SQ. IN.
 LREF 3.1612 IN.
 BREF 2.7120 IN.
 YREF 2.7120 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .0000 PERCENT



EFFECT OF GRIT ON WINGS

(F)MACH = 1.15

REFERENCE INFORMATION	
SREF	6.1980 IN.
LREF	5.1612 IN.
BREF	3.7470 IN.
WREF	2.7120 IN.
VREF	.0000 IN.
ZREF	.0000 IN.
SCALE	.0000 PERCENT

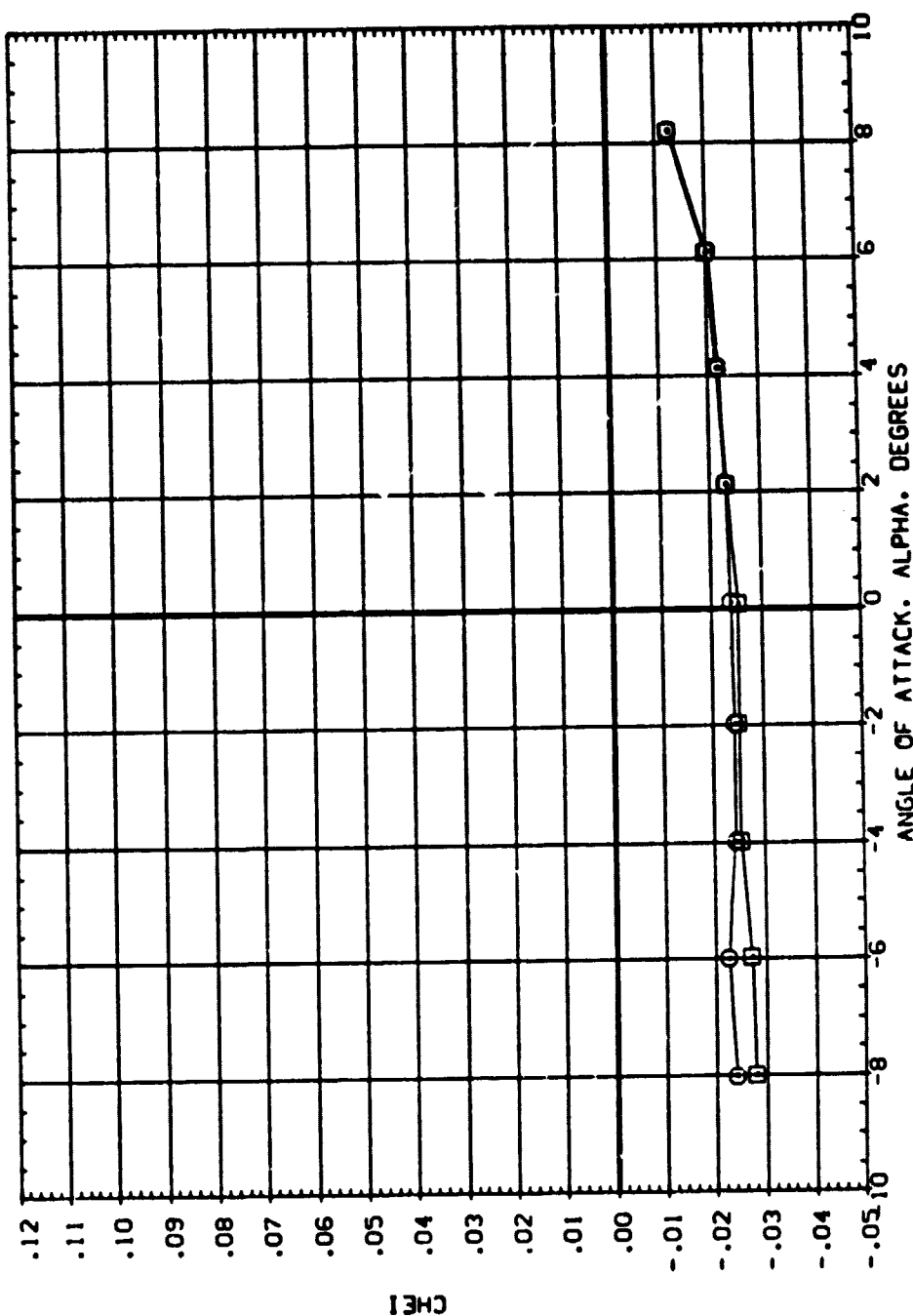


EFFECT OF GRIT ON WINGS

$$(G)_{MACH} = 1.25$$

DATA SET SYMBOL: FA28. MSC INT 656. CONFIG. 02VEZ0PAAT1353 OR
 (FA2856) 8 FA28. MSC INT 656. CONFIG. 02VEZ0PAAT1353 OR
 (FA2857)

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 VREF 2.7120 IN.
 WREF .0080 IN.
 ZREF .0080 IN.
 SCALE .4000 PERIOD

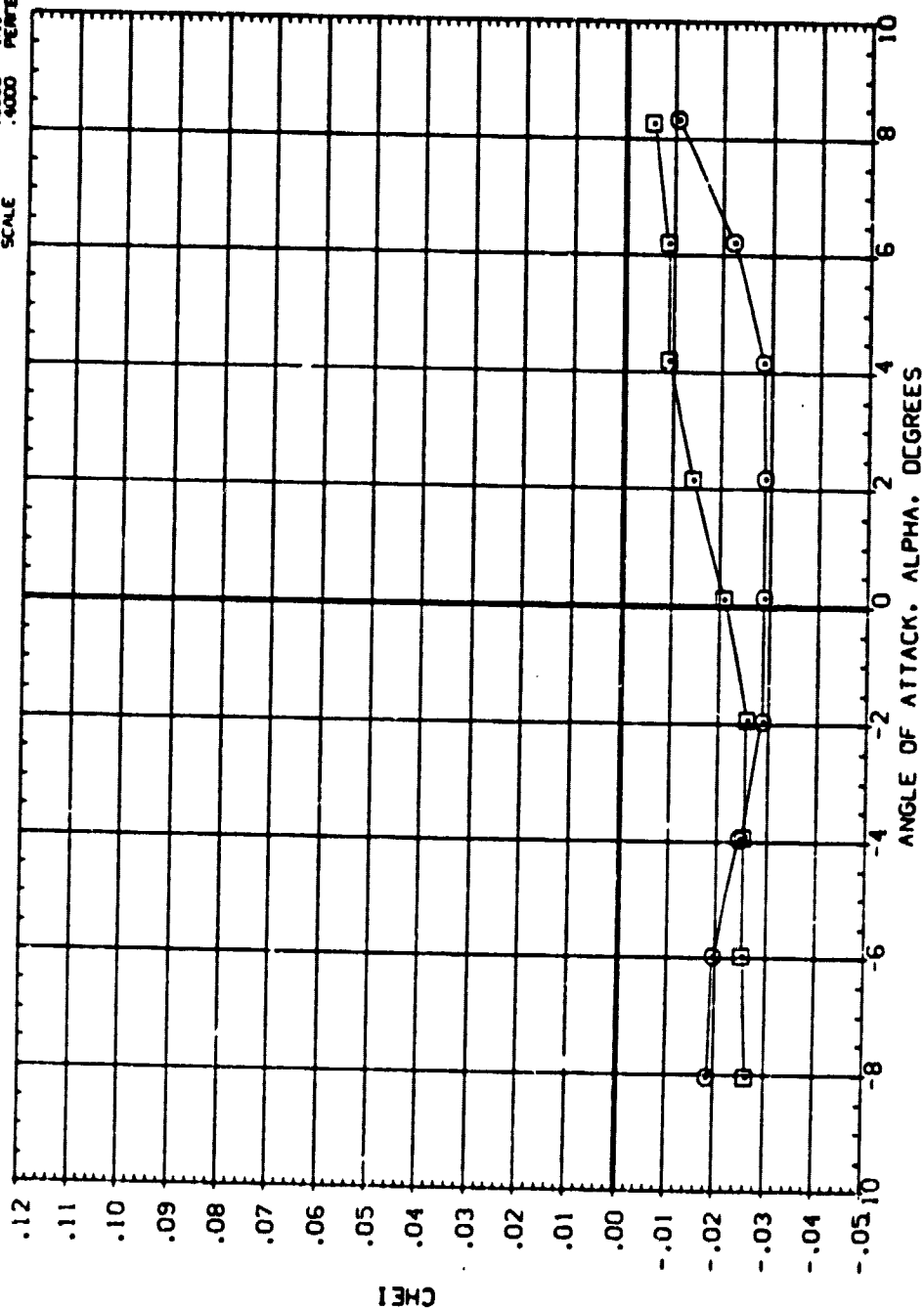


EFFECT OF GRIT ON WINGS

(A)MACH = .60

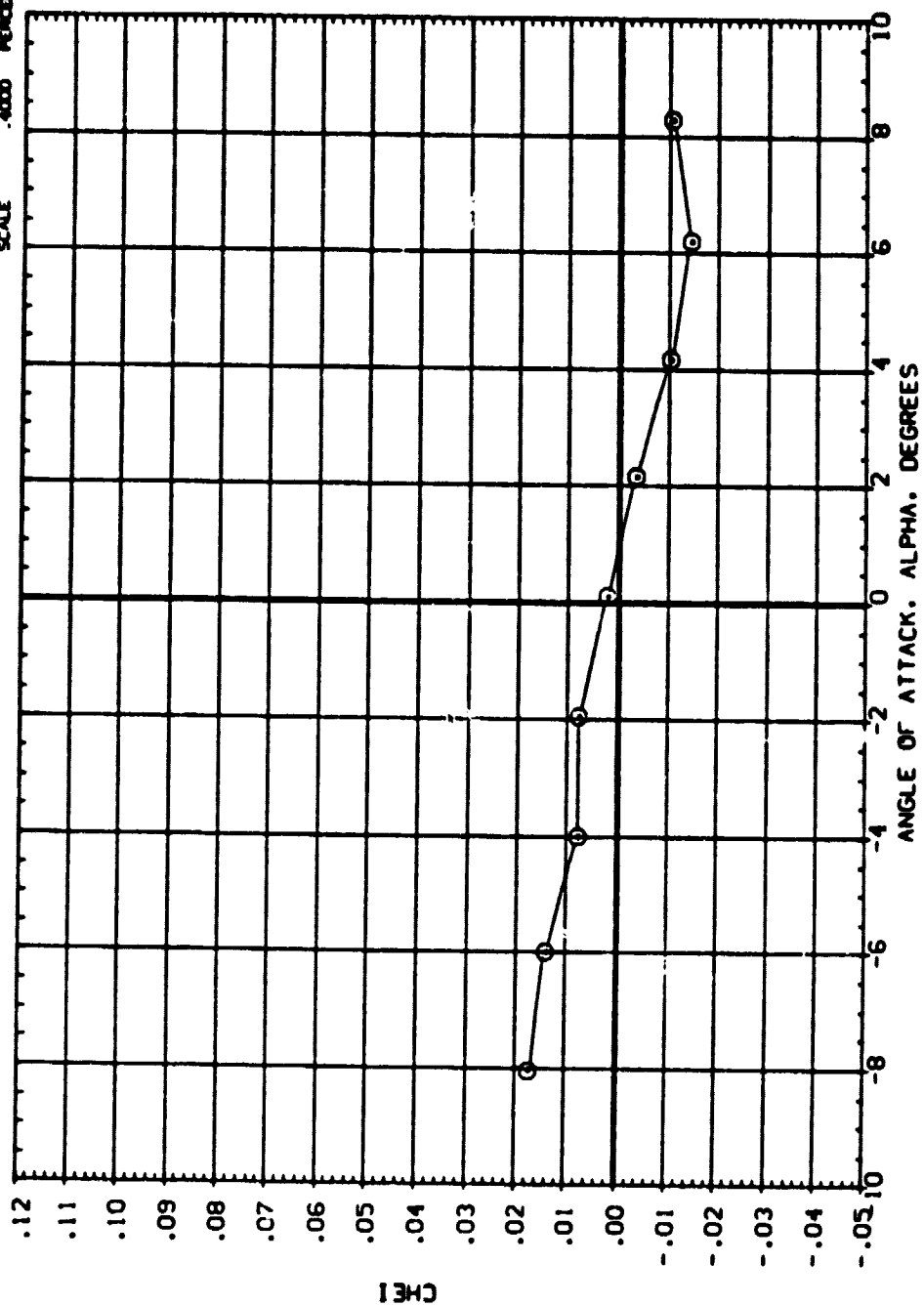
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) □ FA28. MSFC INT 656. CONF 13. CONVEZ28PAA1353
 (FA2867) □ FA28. MSFC INT 656. CONF 16. CONVEZ28PAA1353 OR

REFERENCE INFORMATION
 SREF 6.1580 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 SCALE .4000 PERCENT



(B)MACH = .90

REFSET	6.1980	90.	IN.
UNREF	5.1612		IN.
BREF	3.7470		IN.
XREF	2.7120		IN.
VREF	.0000		IN.
ZREF	.0000		IN.
SCALE	.4000		PERCENT



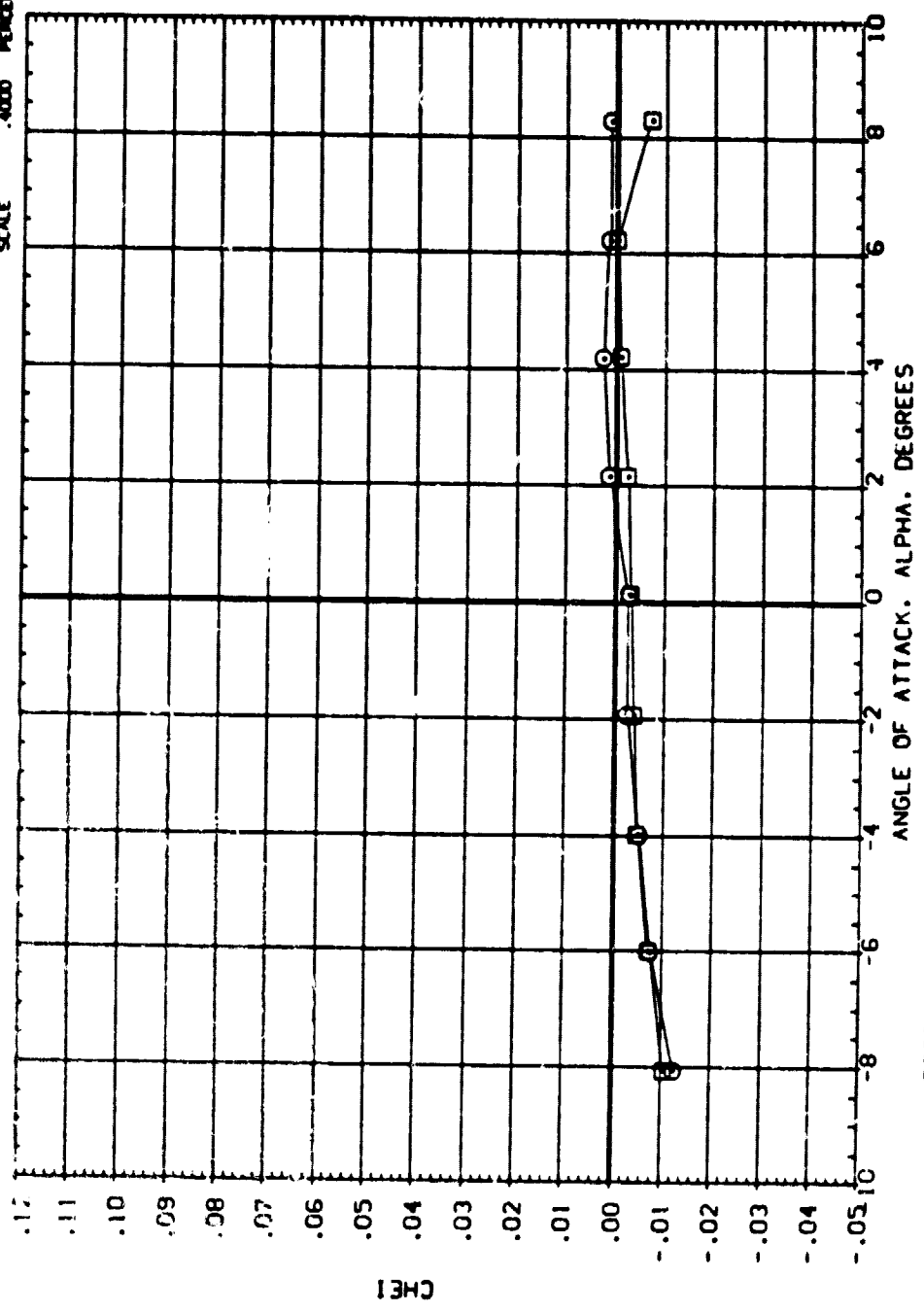
EFFECT OF GRIT ON WINGS

(C)MACH = .95

DATA SET SYMBOL: 9
 IF 1.7% 1.286

CONFIGURATION DESCRIPTION:
 FA28: MSC TWT 656: CONF 16: 02VZ2P0PATT1353 OR
 FA28: MSC TWT 656: CONF 16: 02VZ2P0PATT1353 OR

REFERENCE INFORMATION:
 SREF: 6.1580 50. IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 XREF: 2.7120 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT

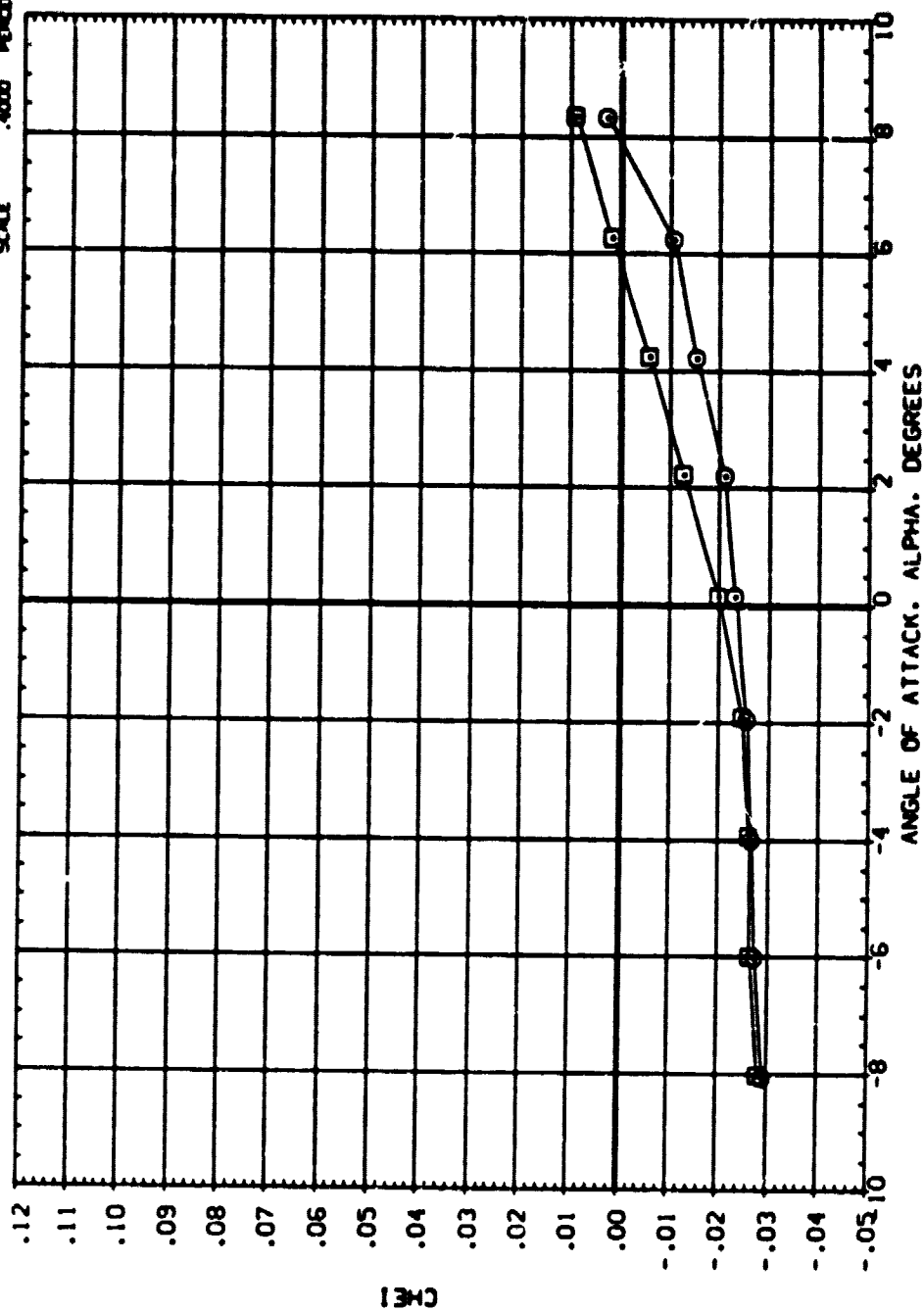


EFFECT OF GRIT ON WINGS

(D)MACH = 1.05

DATA SET SYMBOL: **□** CONFIGURATION DESCRIPTION:
 (FA2058) FA20: HPFC TWT 655: CONF 16: GRVZEMPHATTED 01
 (FA2057) FA20: HPFC TWT 655: CONF 16: GRVZEMPHATTED 01

REFERENCE INFORMATION:
 SET: 6.1580 30. IN.
 UNIT: 5.1612 IN.
 DIST: 2.7170 IN.
 TRIP: .0000 IN.
 SCALE: .4000 PERCENT

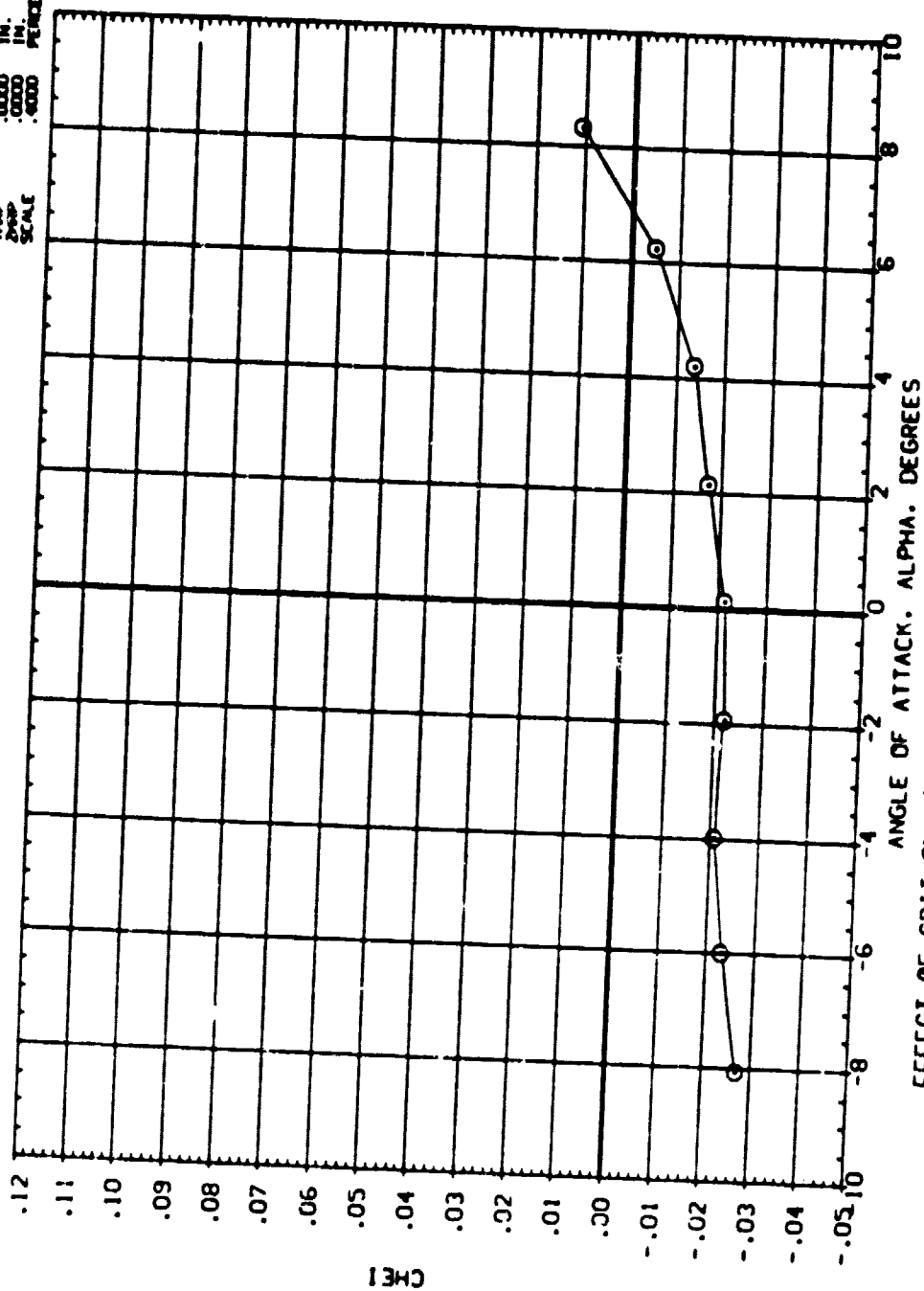


EFFECT OF GRIT ON WINGS

(MACH = 1.10)

DATA SET SYMBOL: FA28. MSFC TWT GSE. CONFIG. 00V2E2M0A11T3E3
 (FA2858) (FA2857) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SHEET 6.1880 50. IN
 LIFT 3.1812 IN.
 DRAG 2.7470 IN.
 YAWP 2.7120 IN.
 ZAWP .0000 IN.
 SCALE .0000 PERCENT

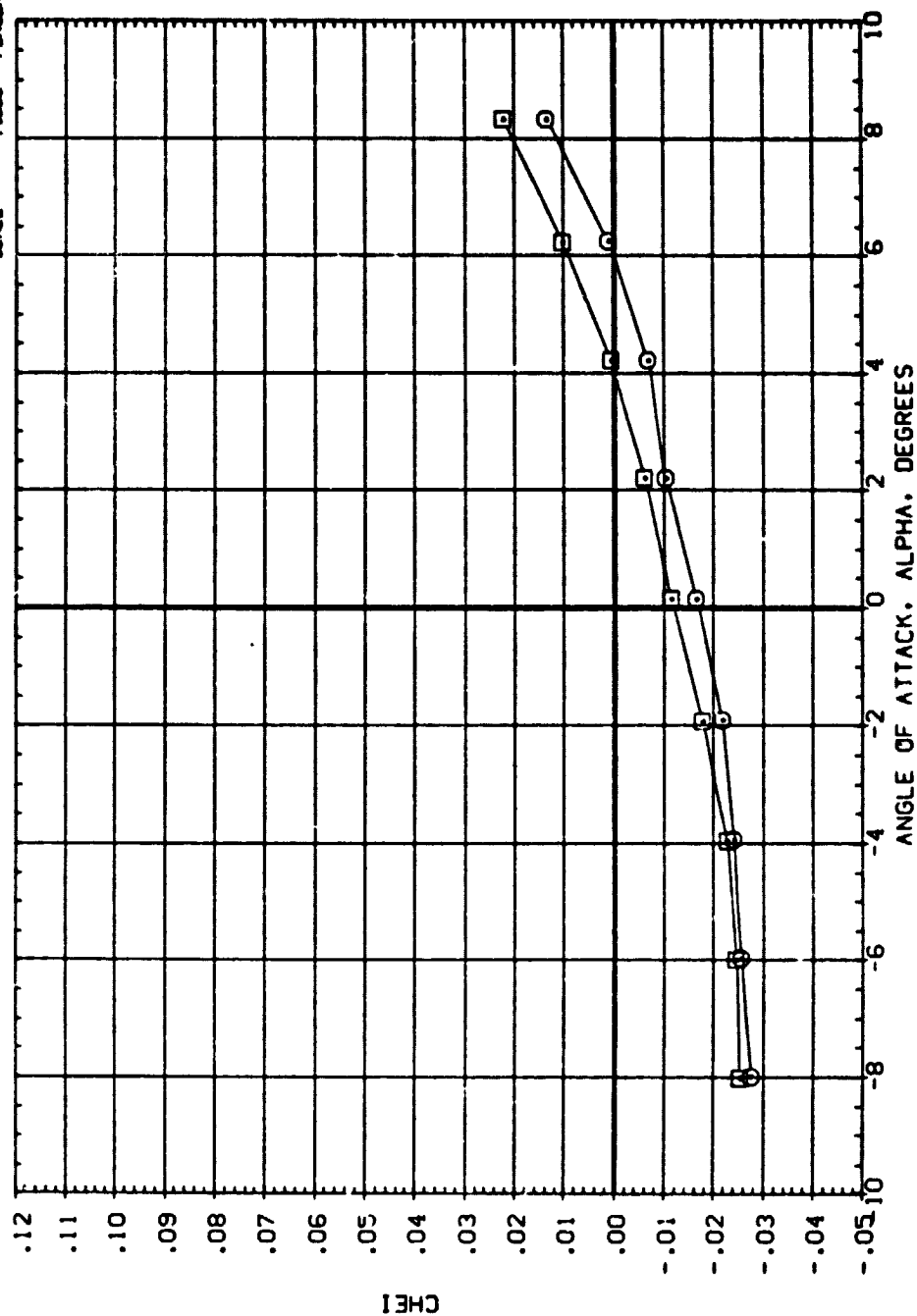


EFFECT OF GRIT ON WINGS

(F)MACH = 1.15

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2858) □ FA28. MSFC INT 656. CONF IG. 02VAE28PAAT1353 OR
 (FA2867) □ FA28. MSFC INT 656. CONF IG. 02VAE28PAAT1353 OR

REFERENCE INFORMATION
 SREF 6.1580 90. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERIOD

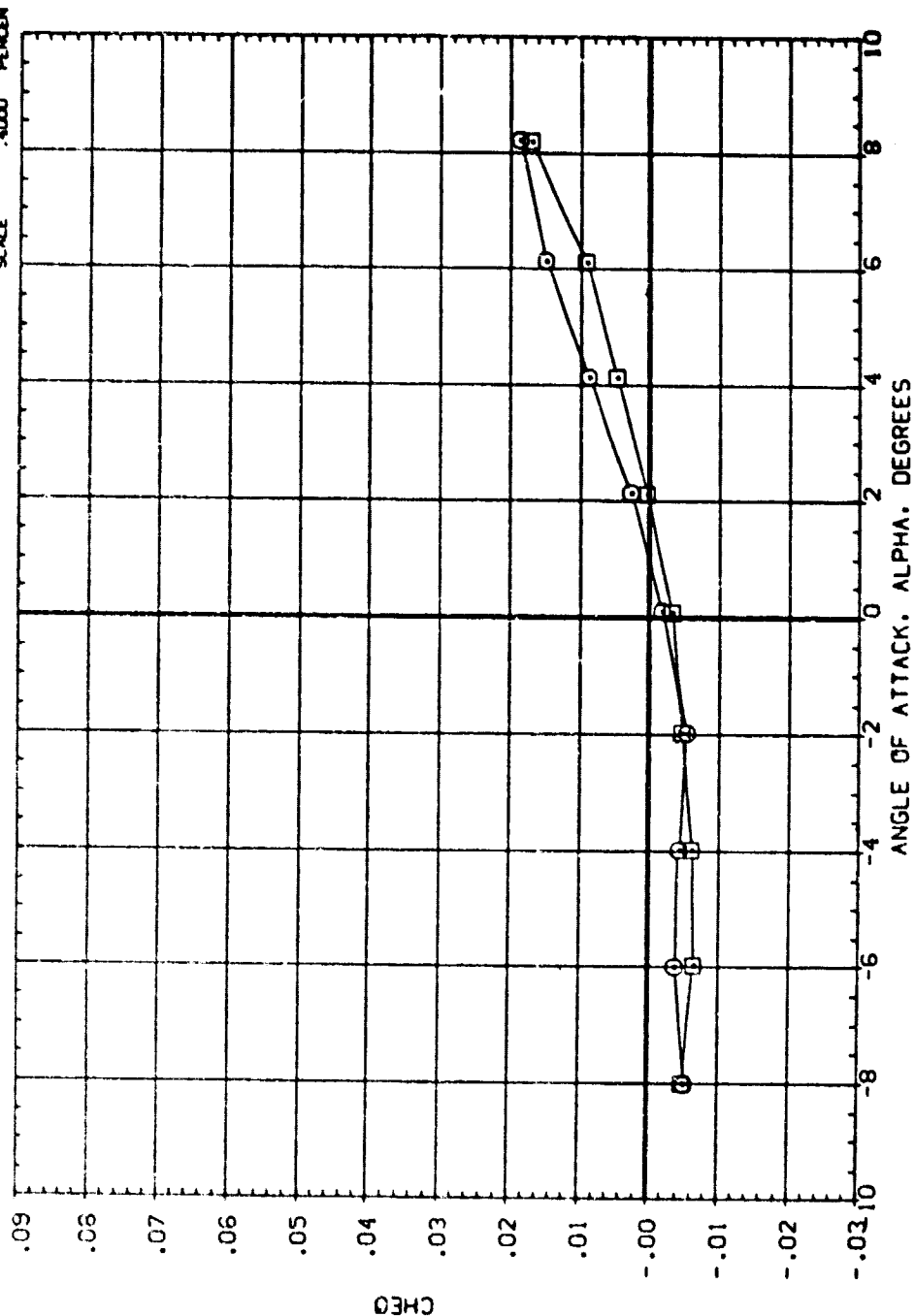


EFFECT OF GRIT ON WINGS

(G)MACH = 1.25

DATA SET SYMBOL (FA2053)
 (FA2067)

CONFIGURATION DESCRIPTION
 FA20. MSFC TWT 556. CONF 16. OZUZE 20PAAT1353 OR
 FA20. MSFC TWT 556. CONF 16. OZUZE 20PAAT1353 OR



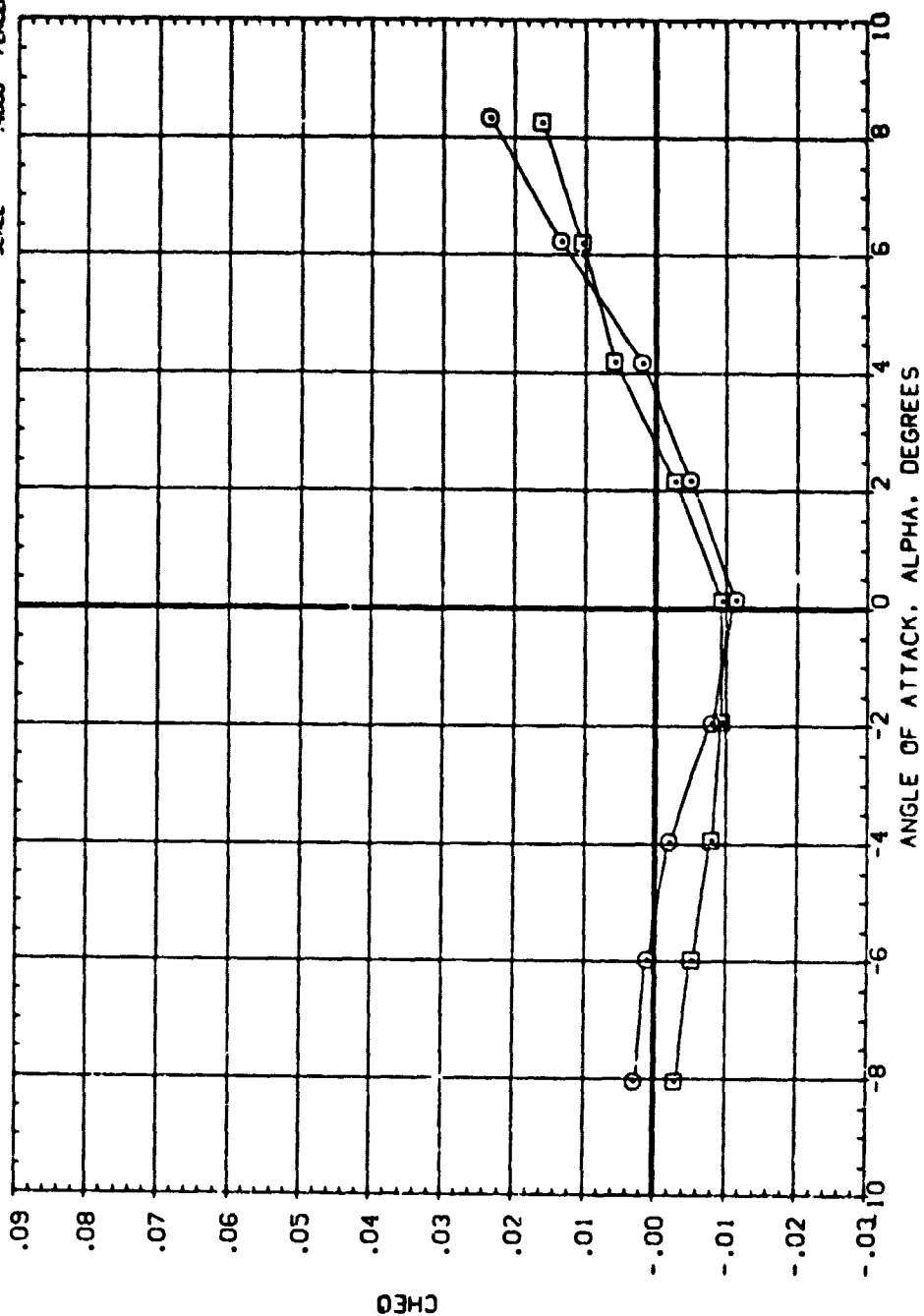
EFFECT OF GRIT ON WINGS

(A)MACH = .60

DATA SET SYMBOL: 9
 (FA2658)
 (FA2667)

CONFIGURATION DESCRIPTION:
 FA28. MSFC TVT 656. CONF 1G. 02N2E20NPA11753
 FA28. MSFC TVT 656. CONF 1G. 02N2E20NPA11753 OR

REFERENCE INFORMATION:
 SREF: 6.1980 30. IN.
 LREF: 3.1612 IN.
 BREF: 2.1470 IN.
 YREF: 2.7120 IN.
 YPROP: 0.0000 IN.
 ZPROP: 0.0000 IN.
 SCALE: .4000 PERCENT

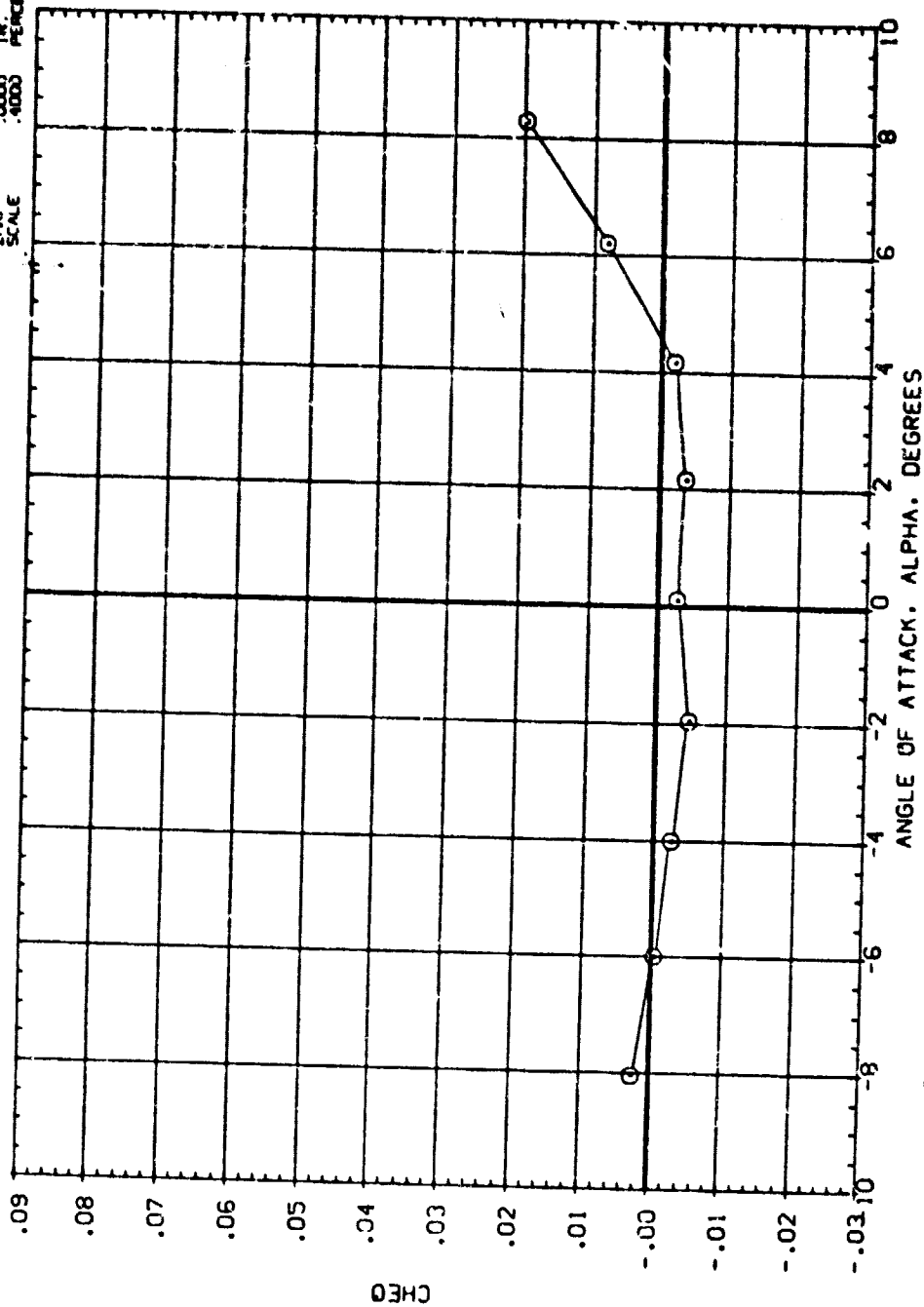


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FA28, MSFC TWT 656, CONFIG. 02V2E2PMAATT353
 (FA2859) (FA2867) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1512 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

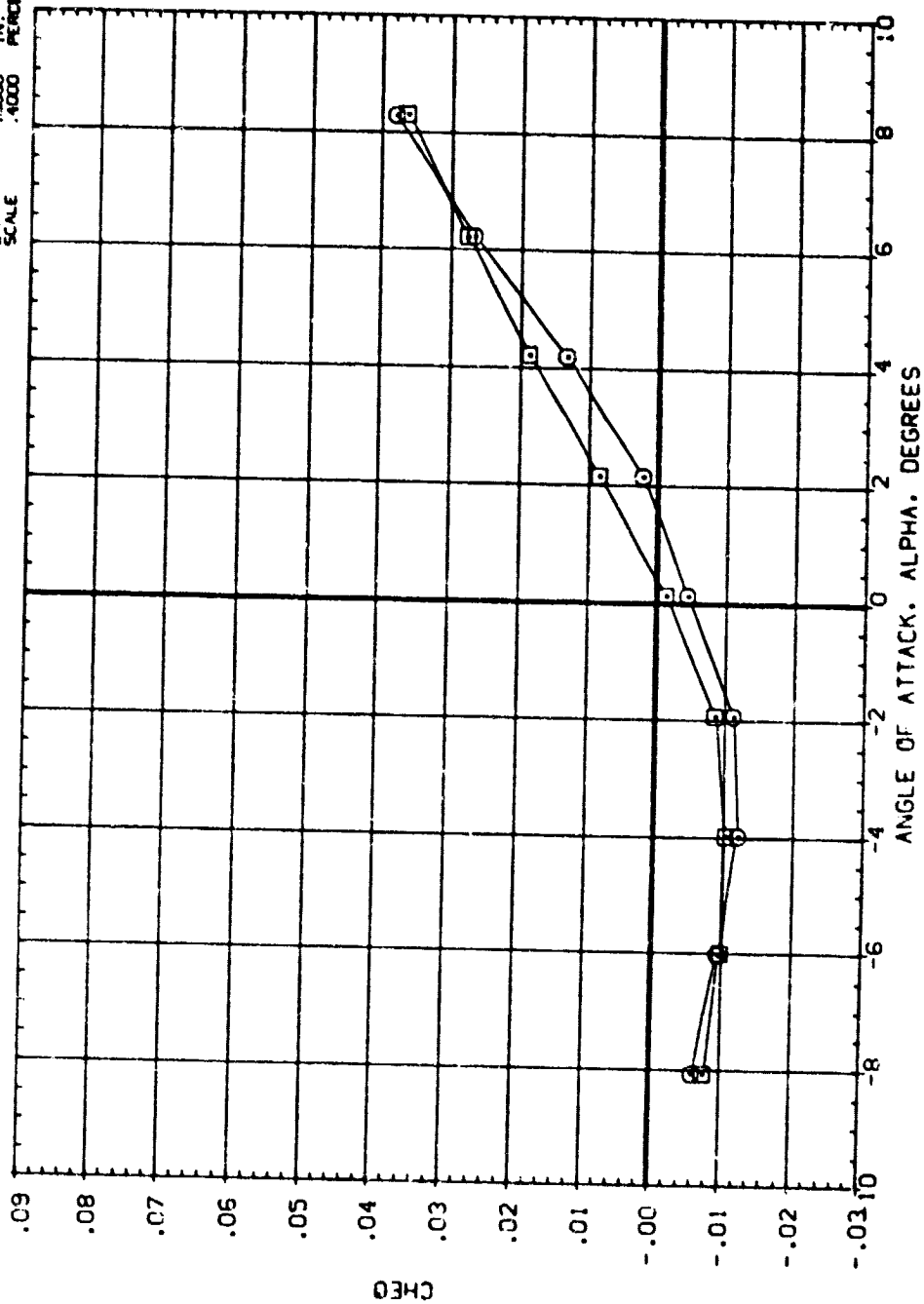


EFFECT OF GRIT ON WINGS

(C)MACH = .95


DATA SET SYMBOL: **8** CONFIGURATION DESCRIPTION:
 (FA2058) FA20. MSFC TWT 656. CONF 10. 02VZEPNPAIT753
 (FA2067) FA20. MSFC TWT 656. CONF 10. 02VZEPNPAIT753 GR

REFERENCE INFORMATION
 SREF 5.1880 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.1470 IN.
 XPRP 2.7170 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .4000 PERCENT



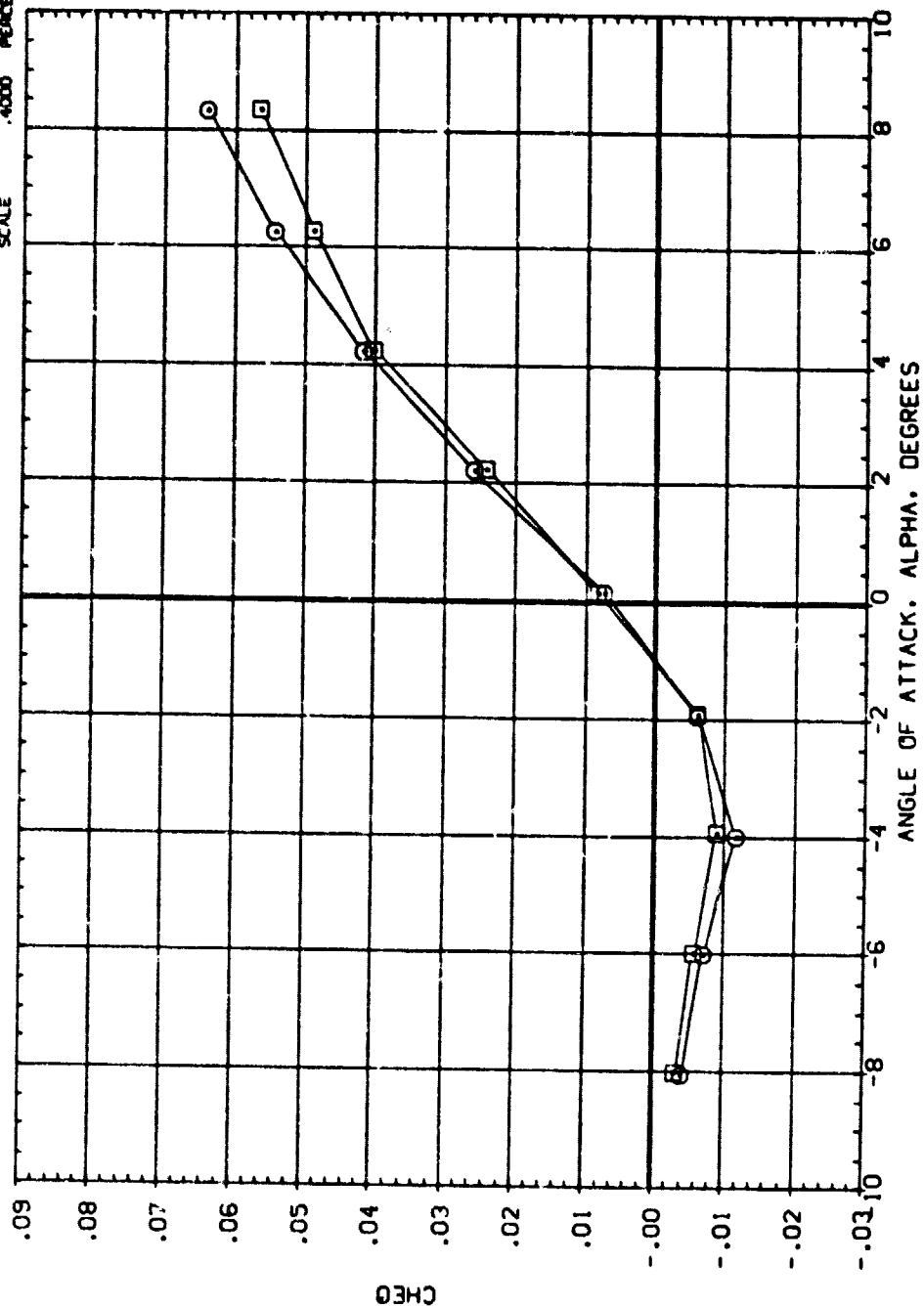
EFFECT OF GRIT ON WINGS

(0)MACH = 1.05

DATA SET SYMBOL: (FA2858) (FA2857)  (FA2859)

CONFIGURATION DESCRIPTION: FA28, MSFC TWT 656, CONF IG. 02NZE20NPAT1353 OR FA28, MSFC TWT 656, CONF IG. 02NZE20NPAT1353 OR

REFERENCE INFORMATION:
 SREF 5.1580 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 XREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 SCALE .0000 PERCENT

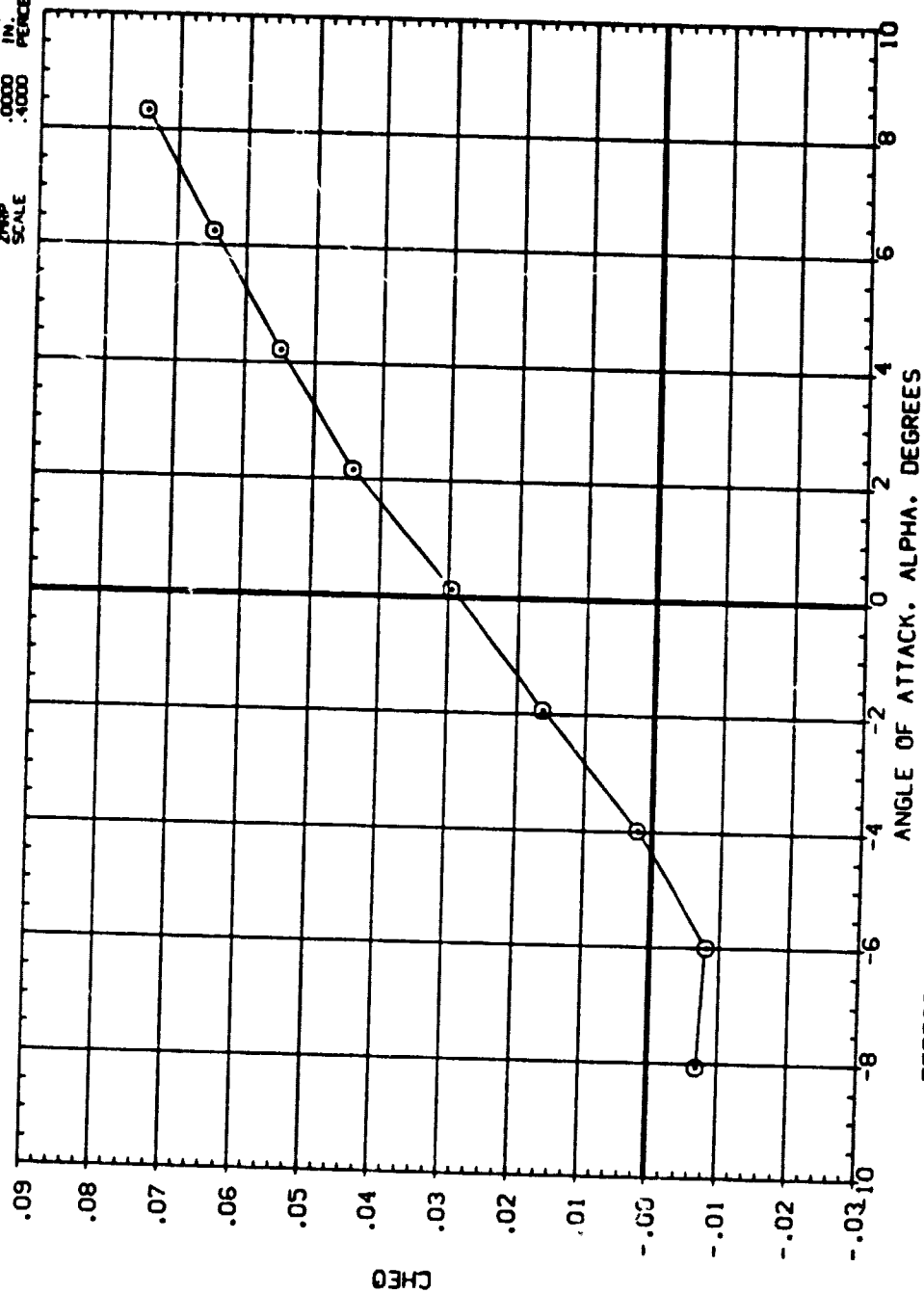


EFFECT OF GRIT ON WINGS

(E)MACH = 1.10

DATA SET SYMBOL: **Q** CONFIGURATION DESCRIPTION: FA20. MSFC TWT 655. CONFIG. 02VCEZPAPAT73S3
 (FA2859) (FA2857) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 3.1612 IN.
 BREF 2.7470 IN.
 WREF 2.7120 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

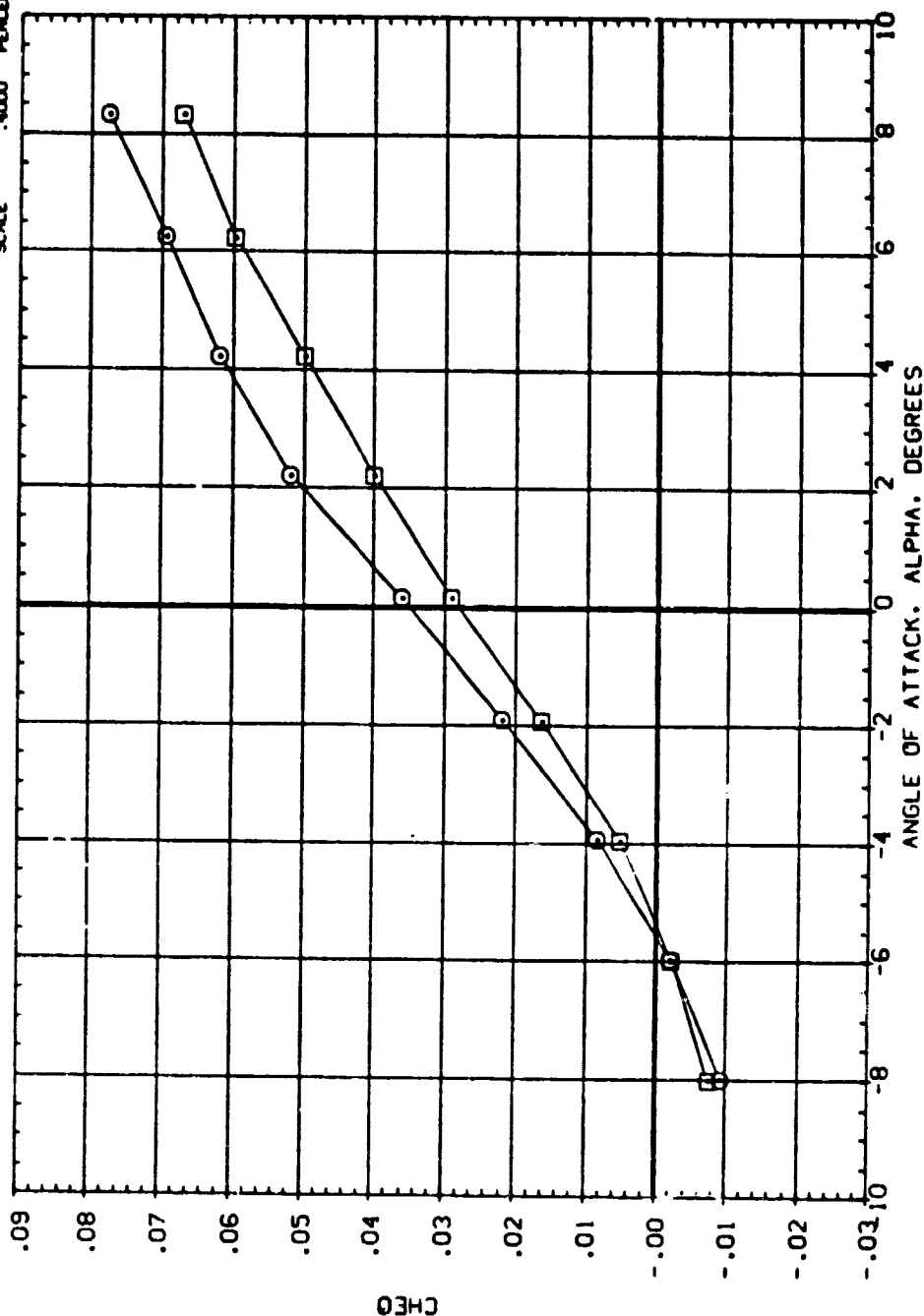


EFFECT OF GRIT ON WINGS

(F)MACH = 1.15

DATA SET SYMBOL: **8** CONFIGURATION DESCRIPTION: FA28, MSFC TUT 656, CONFIG. 03VZ22PMA11353 GR
 (FA2858) FA28, MSFC TUT 656, CONFIG. 03VZ22PMA11353 GR
 (FA2867)

REFERENCE INFORMATION
 SREF 6.1880 SQ. IN.
 LREF 3.1612 IN.
 BREF 2.7120 IN.
 VREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

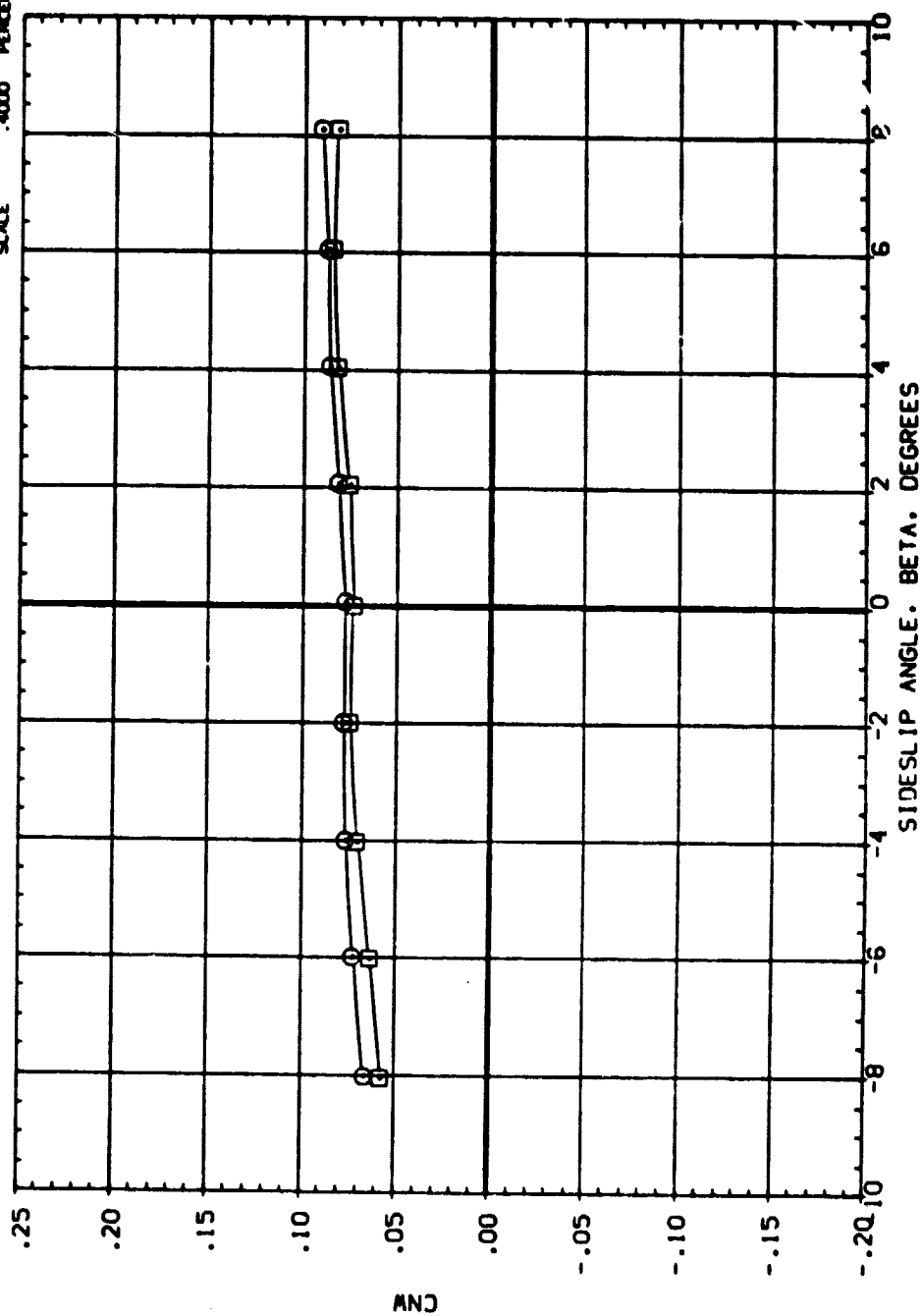


EFFECT OF GRIT ON WINGS

(G)MACH = 1.25

DATA SET SYMBOL: ☐ CONFIGURATION DESCRIPTION:
 (FA2859) FA28: MSC TVT 656: CONF 1G. SIZE 20PAAT1353
 (FA2866) FA28: MSC TVT 656: CONF 1G. SIZE 20PAAT1353 OR

REFERENCE INFORMATION
 SHEET 6.1980 50. IN
 LIFT 5.1612 IN.
 DRIFT 3.7470 IN.
 YARP 2.7120 IN.
 ZARP .0000 IN.
 SCALE .4000 PERCENT

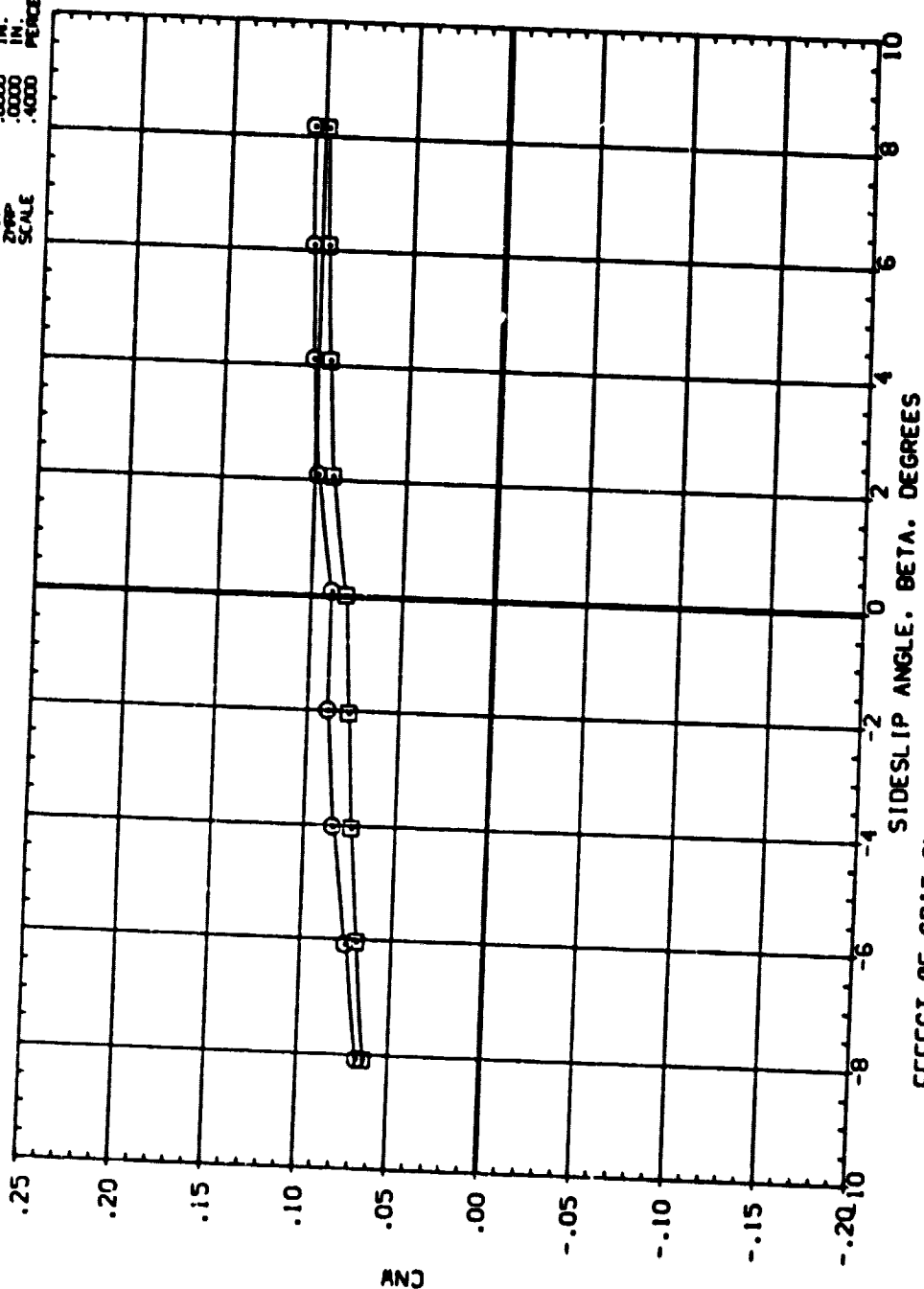


EFFECT OF GRIT ON WINGS

(A)MACH = .60

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FA2859) FA28. HSC TVT 656. CONF 16. QZVZ20PAAT1353
 (FA2866) FA28. HSC TVT 656. CONF 16. QZVZ20PAAT1353 CR

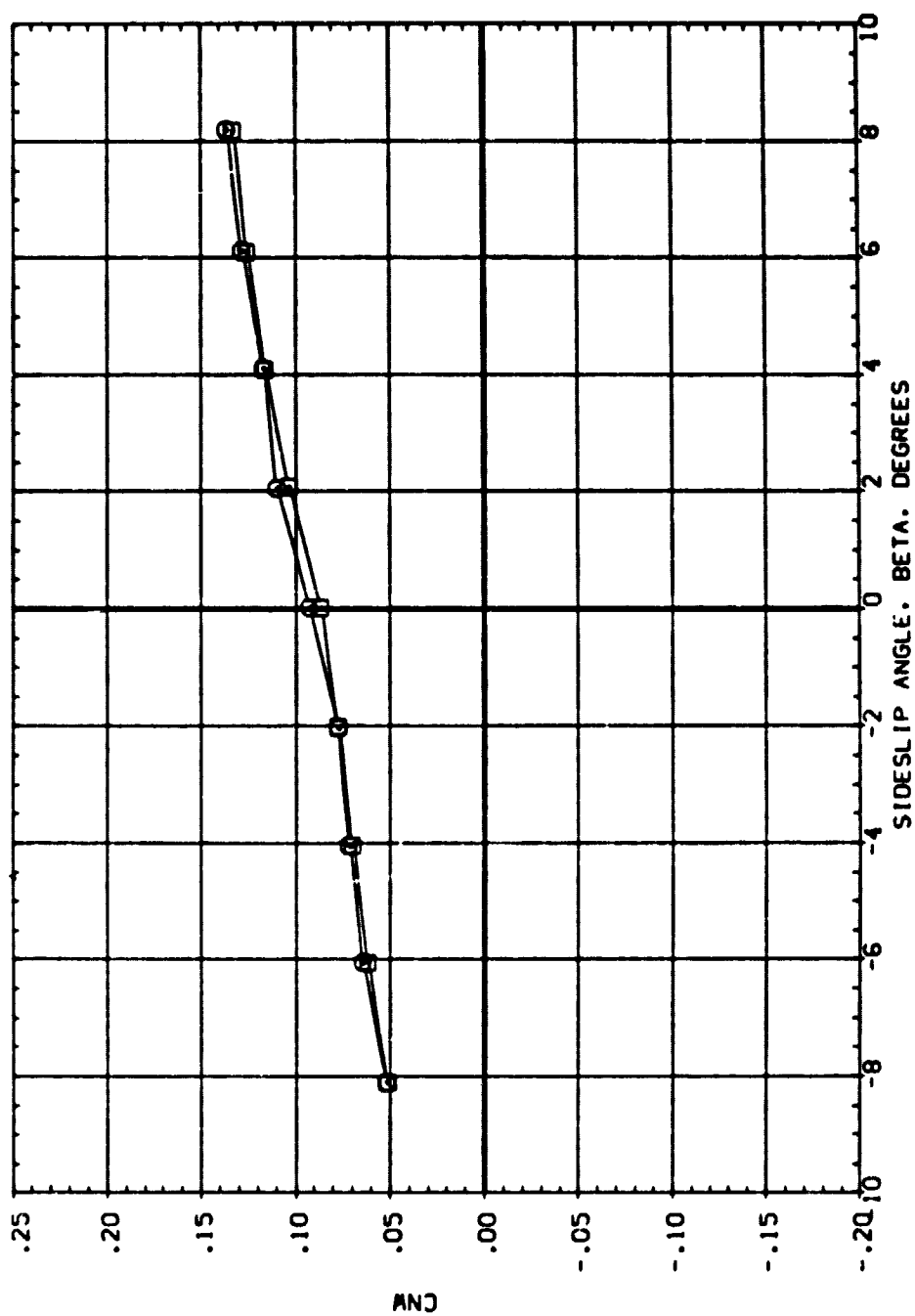
REFERENCE INFORMATION
 SREF 8.1980 90. IN
 LREF 3.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF GRIT ON WINGS

(B)MACH = .90

REFERENCE INFORMATION	
SREF	6.1980
LREF	5.1612
SREF	3.7470
SREF	2.7120
WREF	.0000
ZREF	.0000
SCALE	.4000

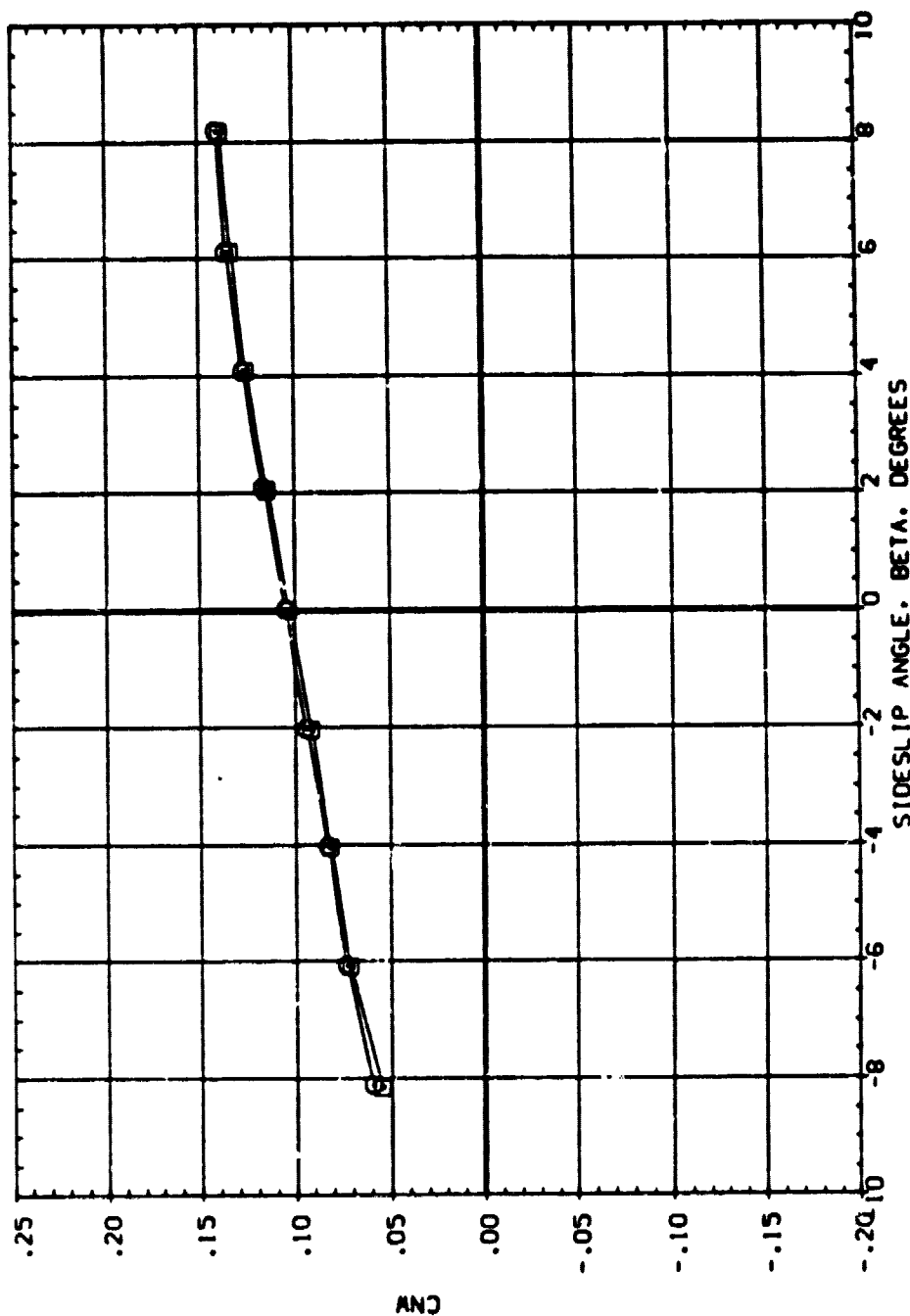


EFFECT OF GRIT ON WINGS

(C)MACH = 1.05

DATA SET SYMBOL: 0
 CONFIGURATION DESCRIPTION: FA20, MPTC TWT 656, CONF 10, 02VZEPHMA11753 OF 02VZEPHMA11753 OF
 (FA2059) (FA2055)

REFERENCE INFORMATION:
 SHEET: 8.1883 90. IN
 DATE: 3.14.73 IN:
 NAME: 2.14.73 IN:
 VAMP: 2.11.70 IN:
 VAMP: .0000 IN:
 SCALE: .4000 PERCENT

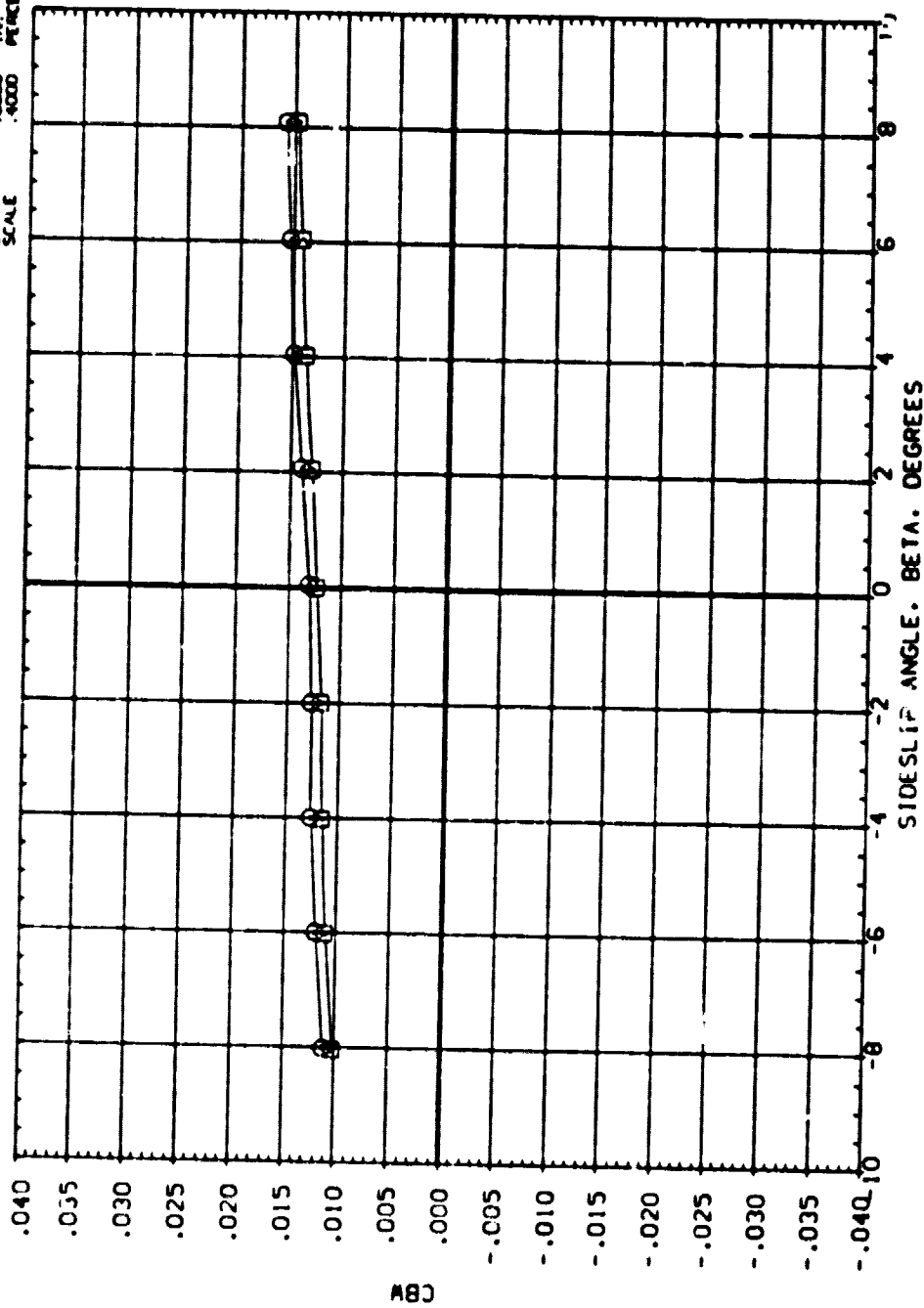


EFFECT OF CRIT ON WINGS

(E)MACH = 1.25


DATA SET SYMBOL: ☐ FA20. MISC. INT. 656. CONF. 1G. SIDE SLIP ANGLE. BETA. DEGREES
 (FA2059) ☐ FA20. MISC. INT. 656. CONF. 1G. SIDE SLIP ANGLE. BETA. DEGREES OR

REFERENCE INFORMATION
 SREF 8.1280 IN.
 LREF 5.1612 IN.
 MREF 3.7470 IN.
 WREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

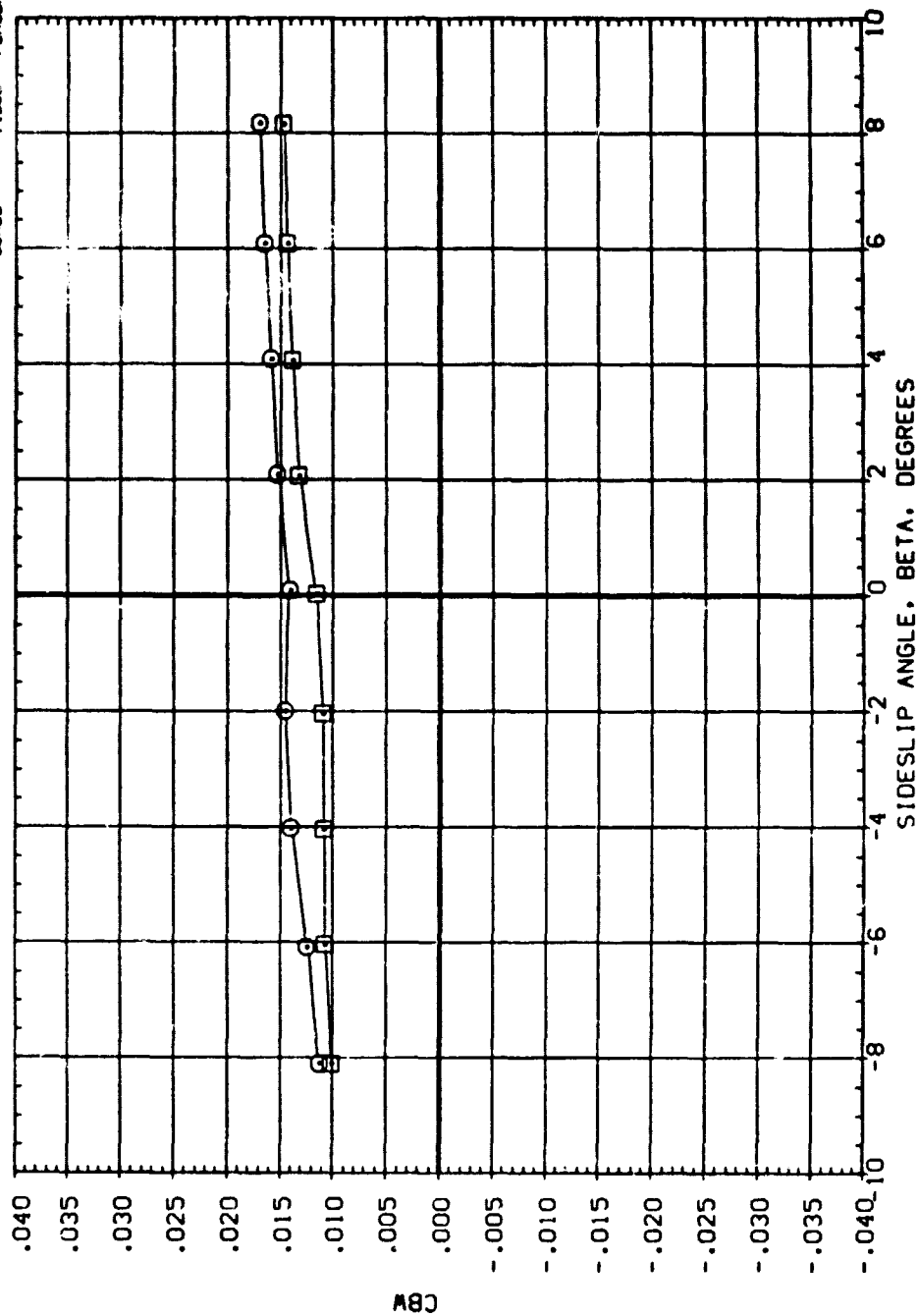


EFFECT OF GRIT ON WINGS

(A)MACH = .60

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FA2859) FA28: MSFC TWT 656. CONF IG. Q2N2E2NPAA11353 OR
 (FA2866) FA28: MSFC TWT 656. CONF IG. Q2N2E2NPAA11353 OR

REFERENCE INFORMATION:
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XPRP 2.7120 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .4000 PERCENT

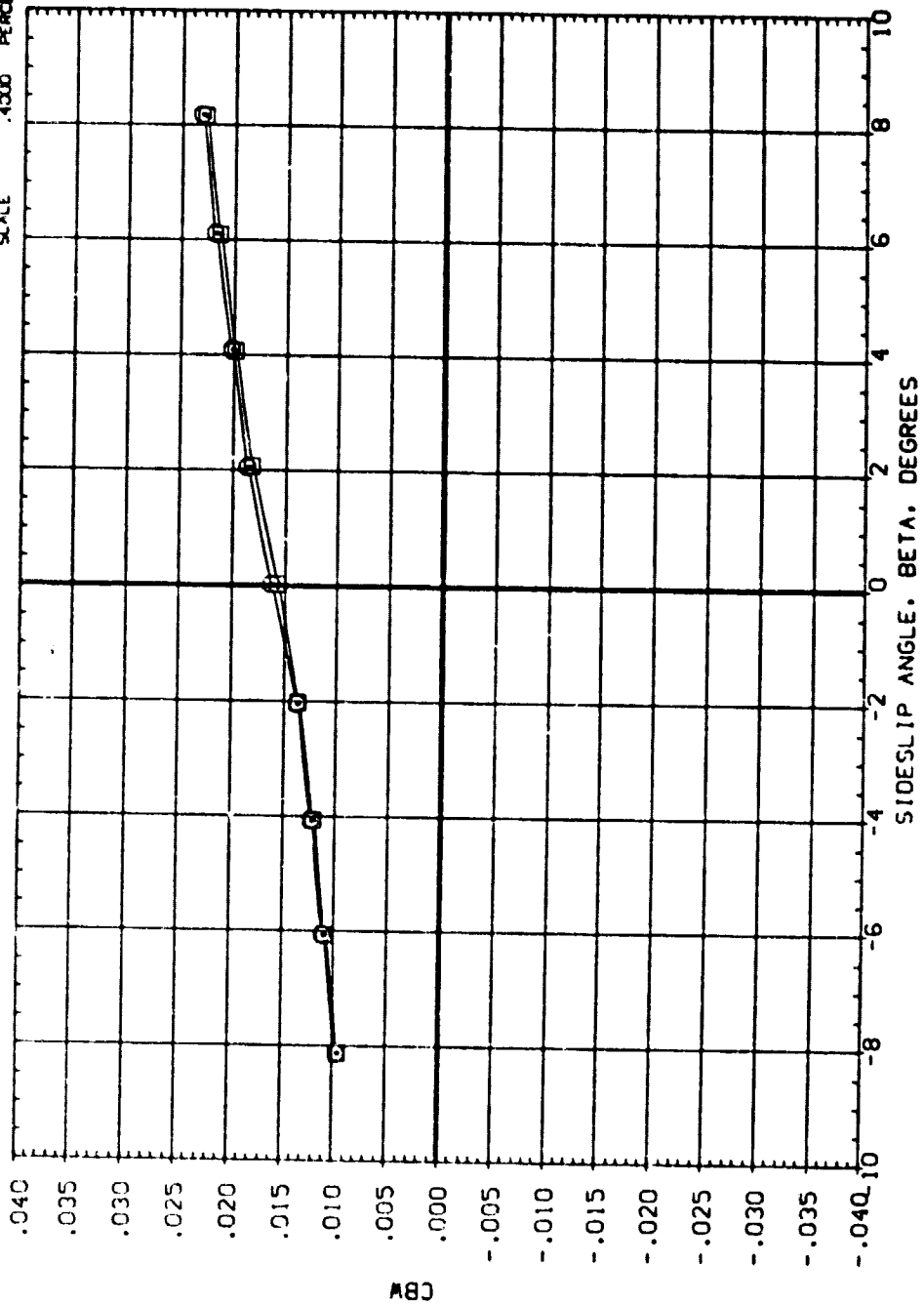


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2059) □ FA28. MSFC TVT 656. CONF IG. 02VZL20PAATTJ53
 (FA2066) □ FA28. MSFC TVT 656. CONF IG. 02VZL20PAATTJ53 OR

REFERENCE INFORMATION
 SREF 6.1880 SQ. IN
 LREF 8.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

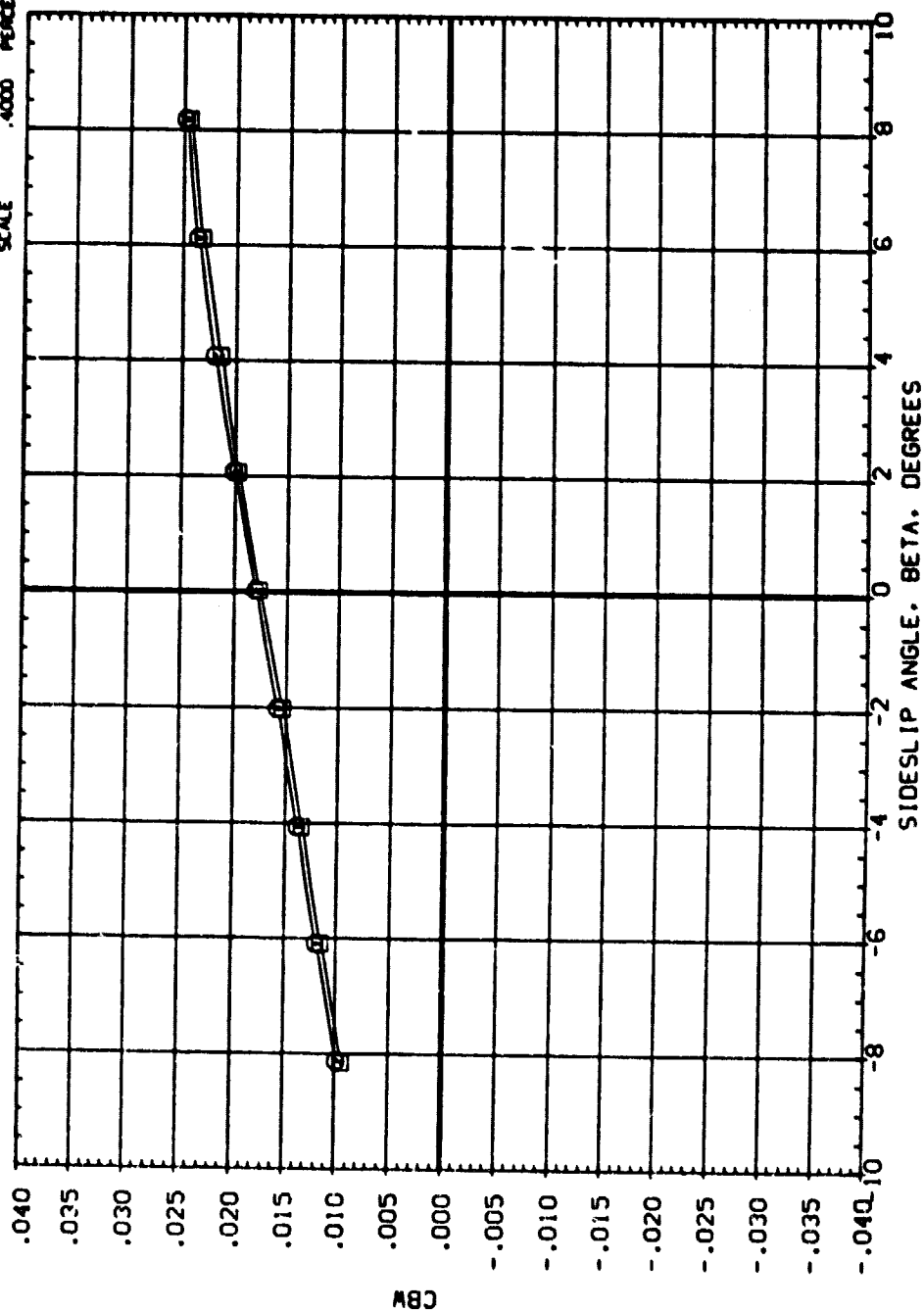


EFFECT OF GRIT ON WINGS

(C)MACH = 1.05


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2059) □ FA20. MSC TVT 656. CONF 16. 02VZ20NPAAT1253
 (FA2066) □ FA20. MSC TVT 656. CONF 16. 02VZ20NPAAT1253 OR

REFERENCE INFORMATION
 SREF 6.1980 90. IN
 LREF 5.1512 IN.
 BREF 3.7470 IN.
 YPROP 2.7120 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

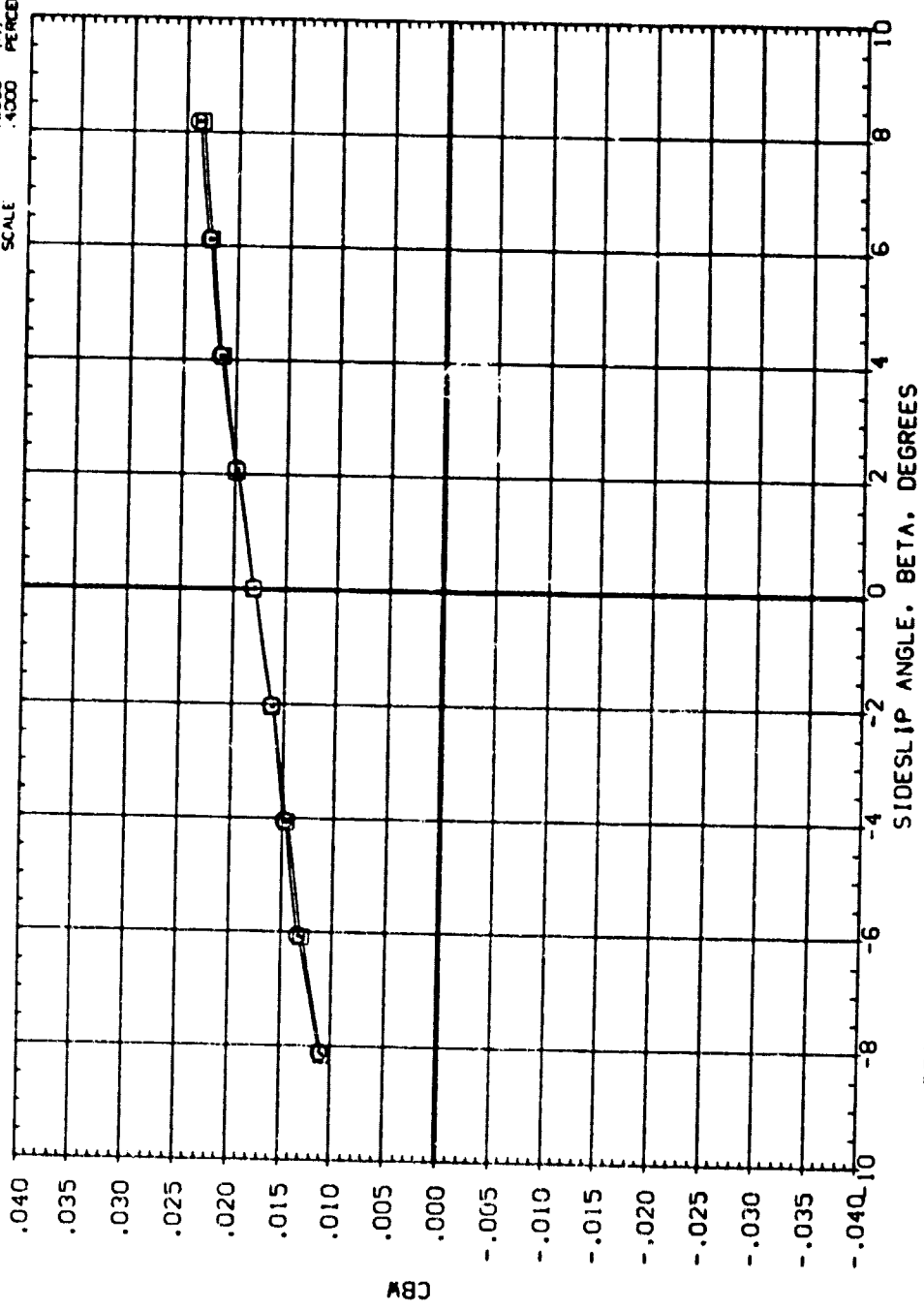


EFFECT OF GRIT ON WINGS

(0)MACH = 1.10

DATA SET SYMBOL: (FA2859)  CONFIGURATION DESCRIPTION: FA28, MSC TWT 556, CONF IG. 02VZ2P4PAATTJ53 OR FA28, MSC TWT 556, CONF IG. 02VZ2P4PAATTJ53 OR

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 3.1612 IN.
 BREF 3.7170 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE 4.000 PERCENT

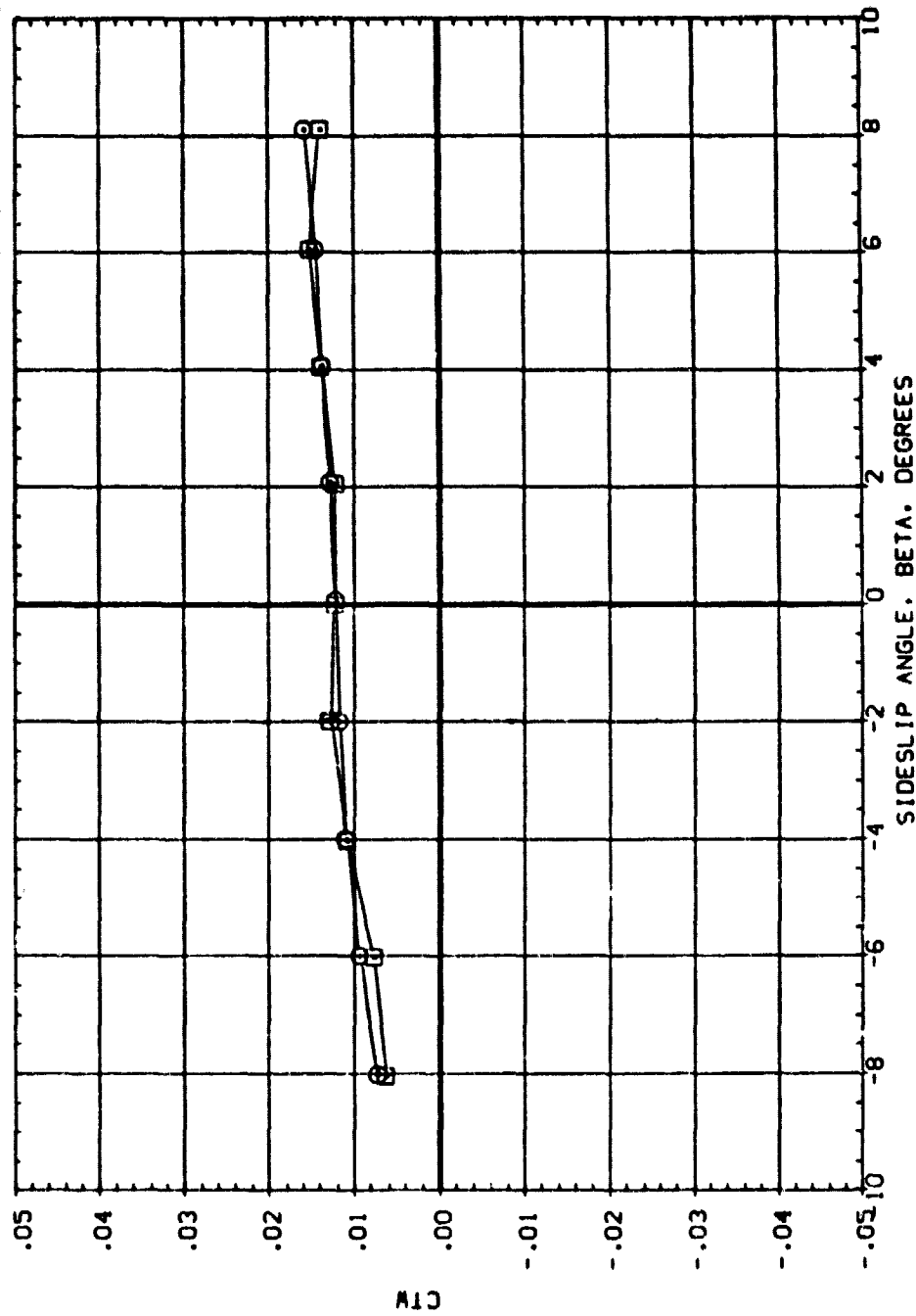


EFFECT OF GRIT ON WINGS

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2893) □ FA28. HSC TWT 656. CONFIG. 02VZ2PAPAT1253
 (FA2866) □ FA28. HSC TWT 656. CONFIG. 02VZ2PAPAT1253 OR

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 3.1612 IN.
 BREF 2.7470 IN.
 XREF 2.7120 IN.
 YREF 0.0000 IN.
 ZREF 0.0000 IN.
 SCALE .0000 PERCENT

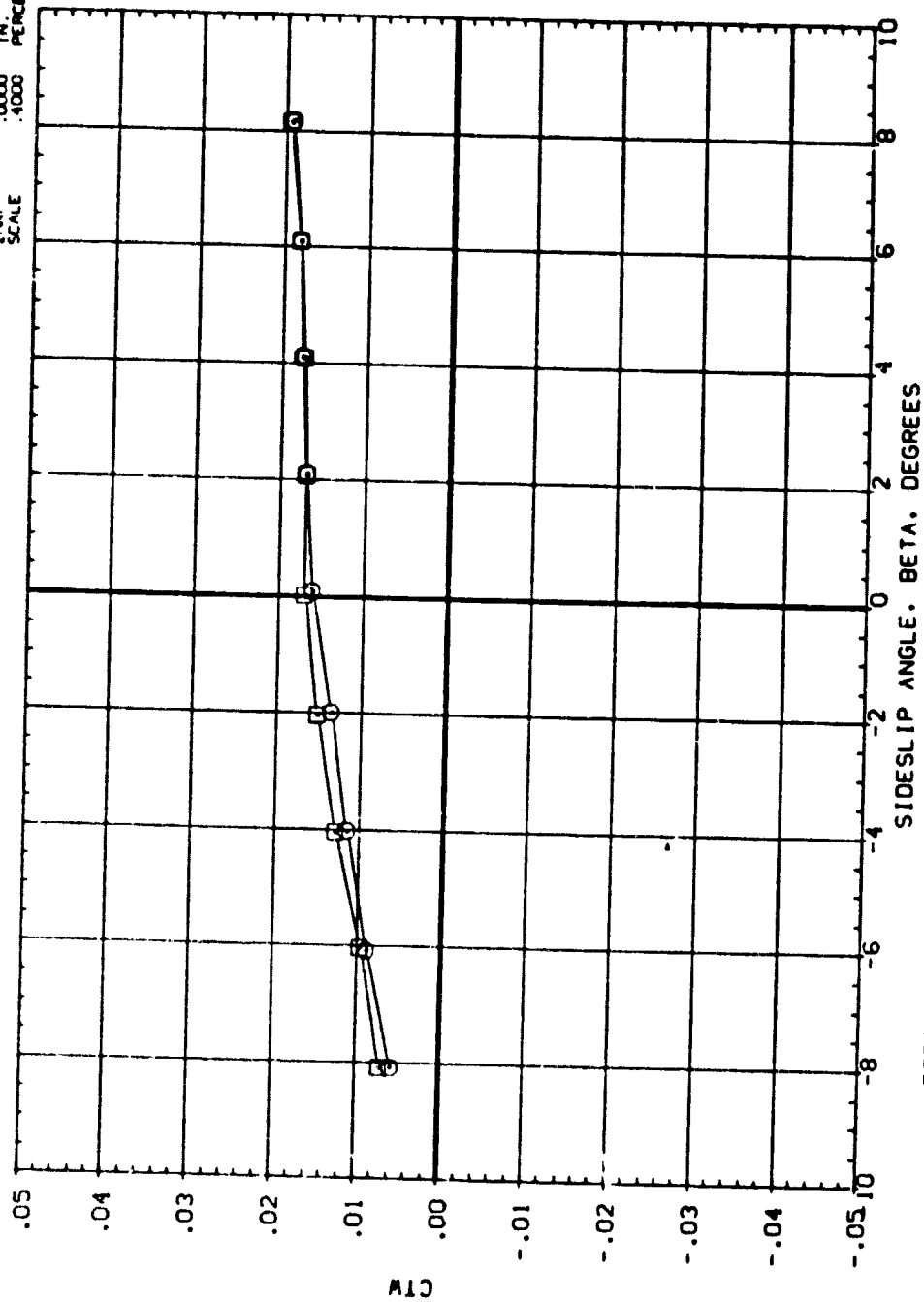


EFFECT OF GRIT ON WINGS

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2859) □ FA28, MSFC TVT 656, CONF IG. 02N2E20NPA11353 OR
 (FA2866) □ FA28, MSFC TVT 656, CONF IG. 02N2E20NPA11353 OR

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

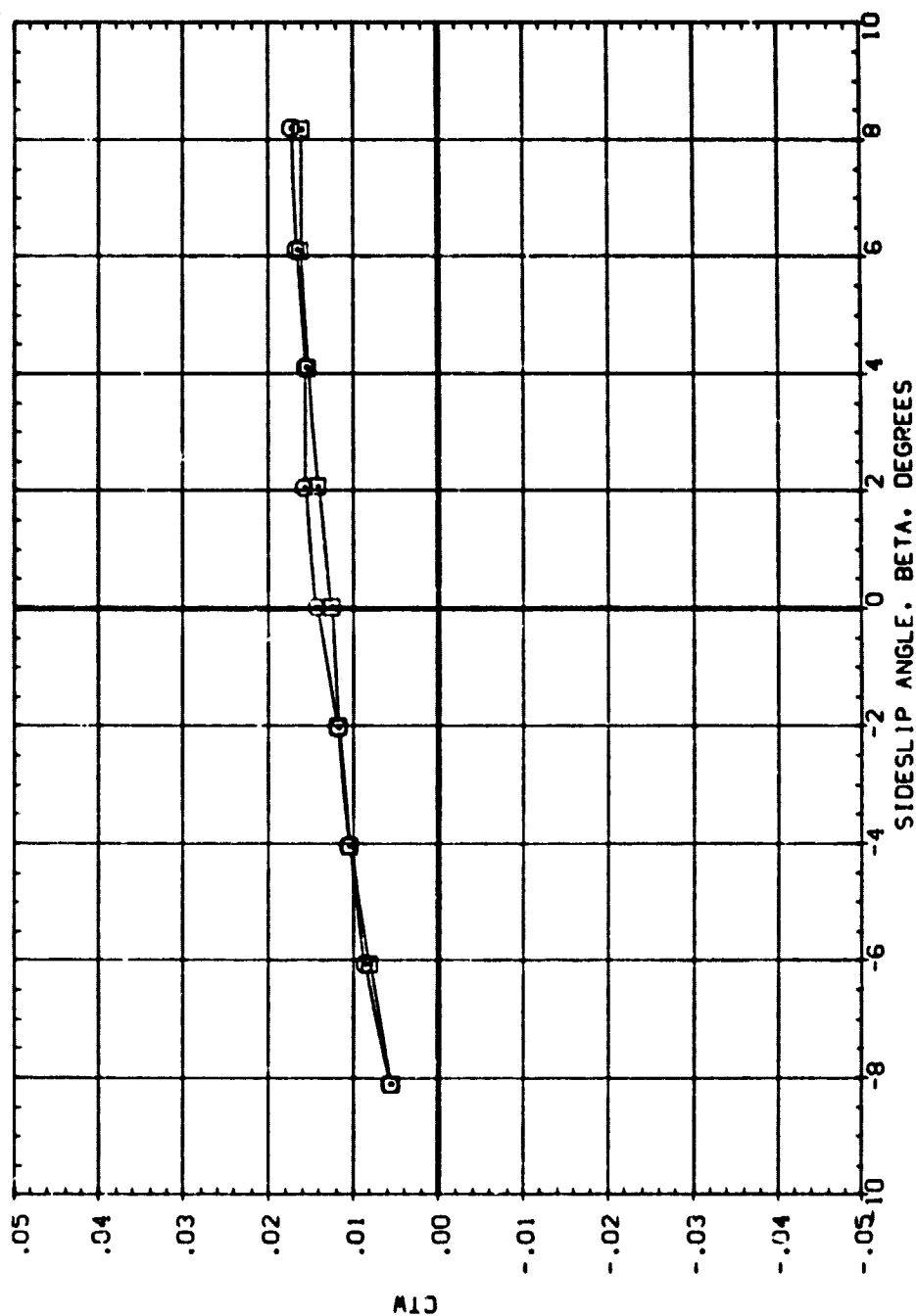


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL: \square CONFIGURATION DESCRIPTION:
 (FA2899) FA28. MSC TVT 656. CONF IG. 02VZ2PAPAT1353 OR
 (FA2866) FA28. MSC TVT 656. CONF IG. 02VZ2PAPAT1353 OR

REFERENCE INFORMATION
 SREF 6.1800 IN.
 LREF 5.1612 IN.
 BREF 2.7470 IN.
 RREF .0000 IN.
 TREF .0000 IN.
 SCALE .0000 PERCENT

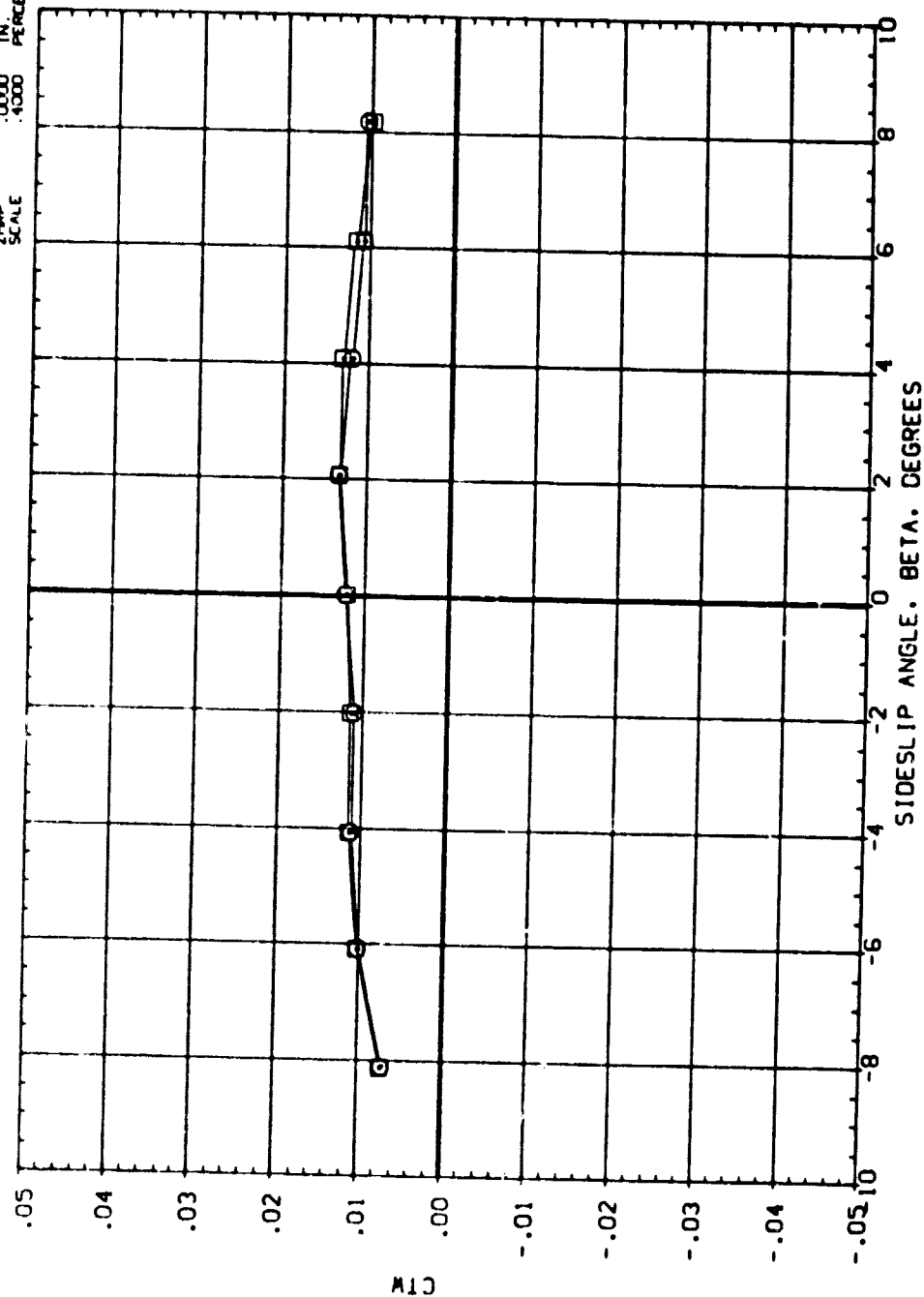


EFFECT OF GRIT ON WINGS

(C)MACH = 1.05

DATA SET SYMBOL: **Q** CONFIGURATION DESCRIPTION:
 (FA2859) FA28: WSC TV: 656; CONF: 02VZ20-PAAT1353
 (FA2866) FA28: WSC TV: 656; CONF: 02VZ20-PAAT1353 OR

REFERENCE INFORMATION
 SREF: 6.1980 SQ. IN.
 LREF: 5.1612 IN.
 BREF: 2.7470 IN.
 YREF: 2.7120 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT

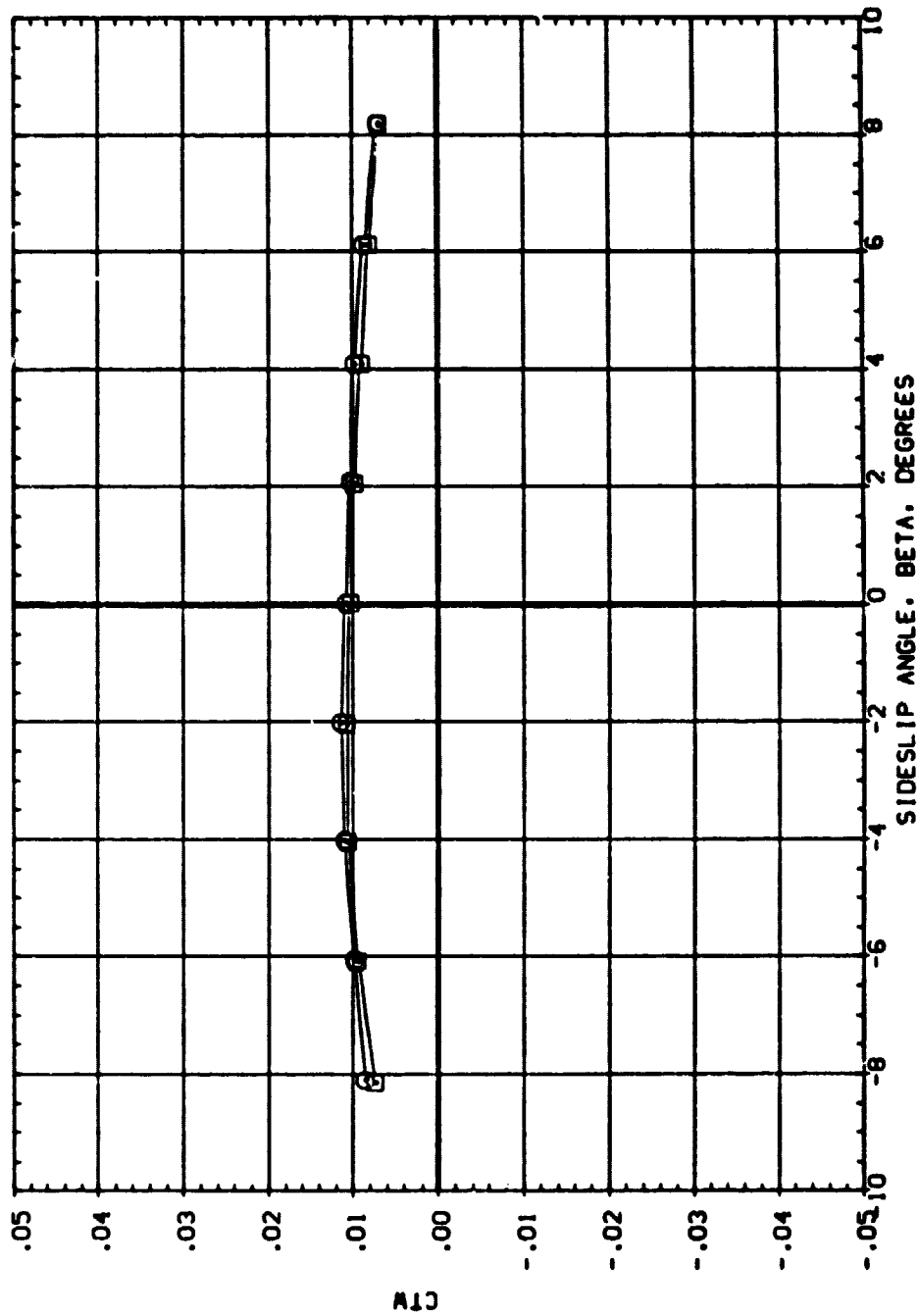


EFFECT OF GRIT ON WINGS

(O)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA2859) □ FA28. MSC TVT 656. CONF.IG. 02VZ23PAPATTJ53
 (FA2866) □ FA28. MSC TVT 656. CONF.IG. 02VZ23PAPATTJ53 OR

REFERENCE INFORMATION
 SREF 6.1580 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

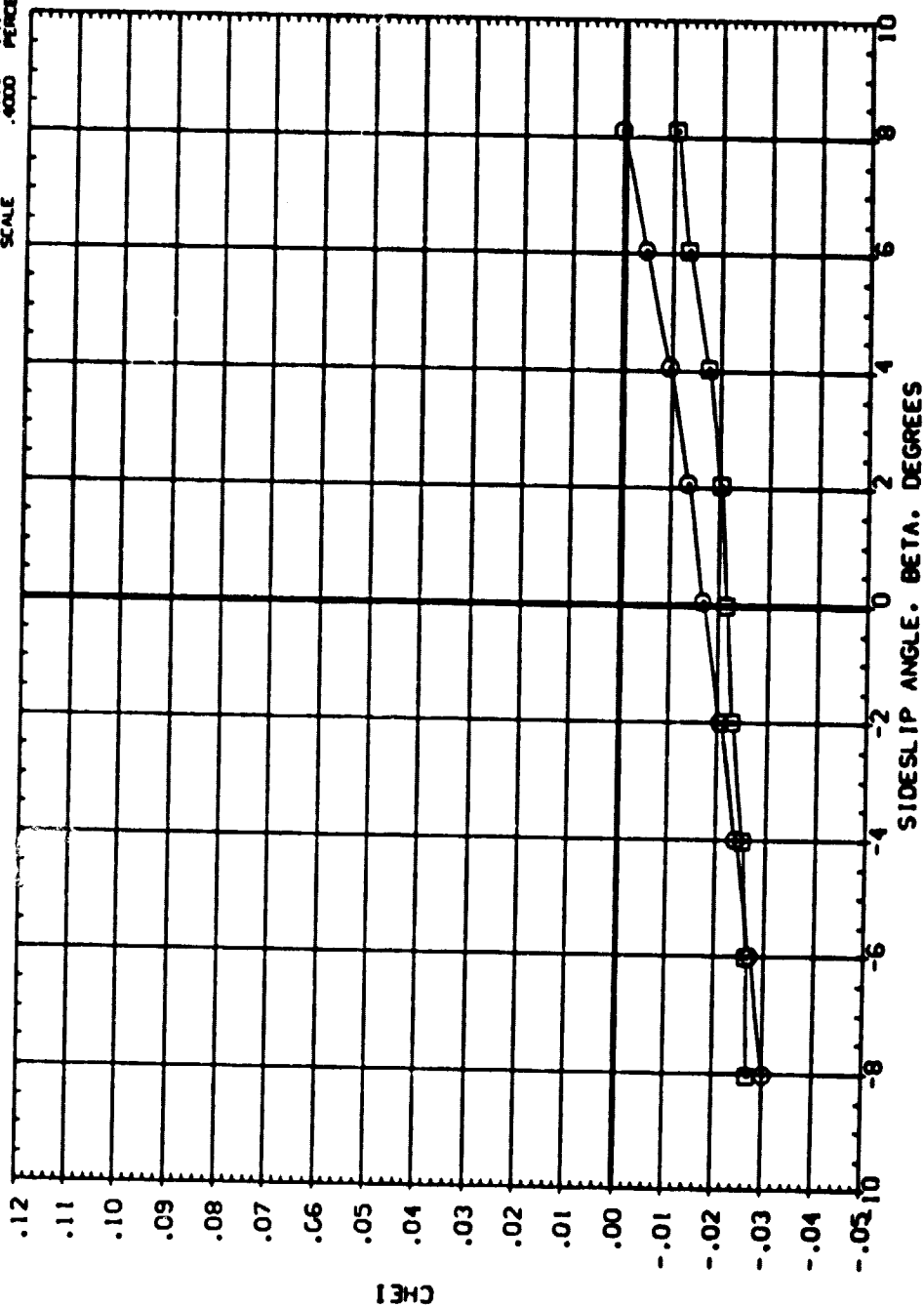


EFFECT OF GRIT ON WINGS

(E)MACH = 1.25

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION: FA29, NPFC TUT 656, CONFIG. 00VEZPMAT1253 OR FA2966, NPFC TUT 656, CONFIG. 00VEZPMAT1253 OR

REFERENCE INFORMATION
 SHEET 8 OF 80
 LIFT 1.1612 IN.
 DRAG 2.7170 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .4000 PERCENT

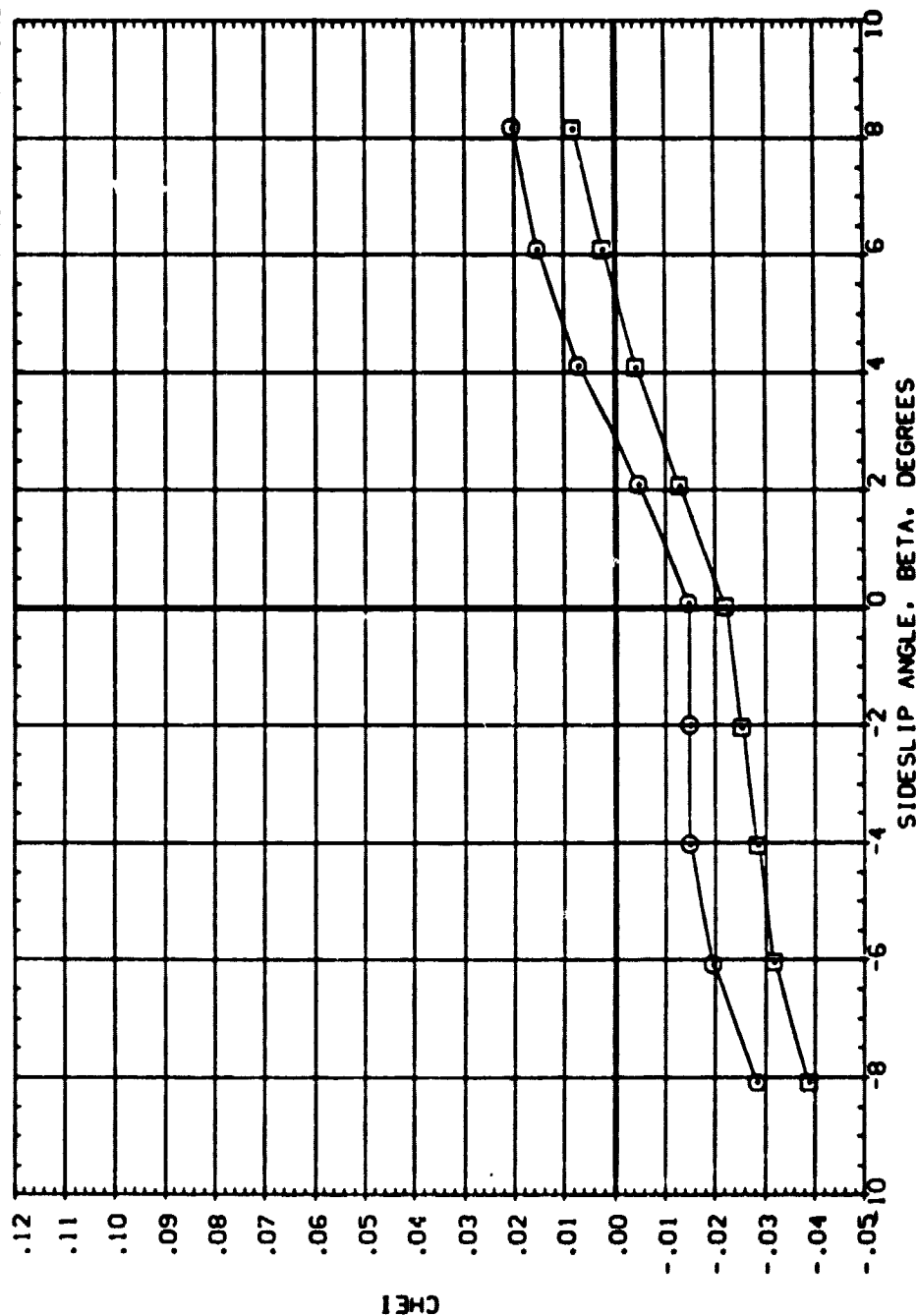


EFFECT OF GRIT ON WINGS

(A)MACH = .60

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION:
 (FA2059) FA20: HSC TVT 656: CONF 10: GRNZEJMPAA11353
 (FA2066) FA20: HSC TVT 656: CONF 10: GRNZEJMPAA11353 OR

REFERENCE INFORMATION:
 SHEET 6.1800 90. IN
 UNIT 3.1612 IN.
 SHEET 3.1470 IN.
 UNIT 2.7170 IN.
 SHEET 3.0000 IN.
 UNIT 3.0000 IN.
 SCALE 4000 PERCENT

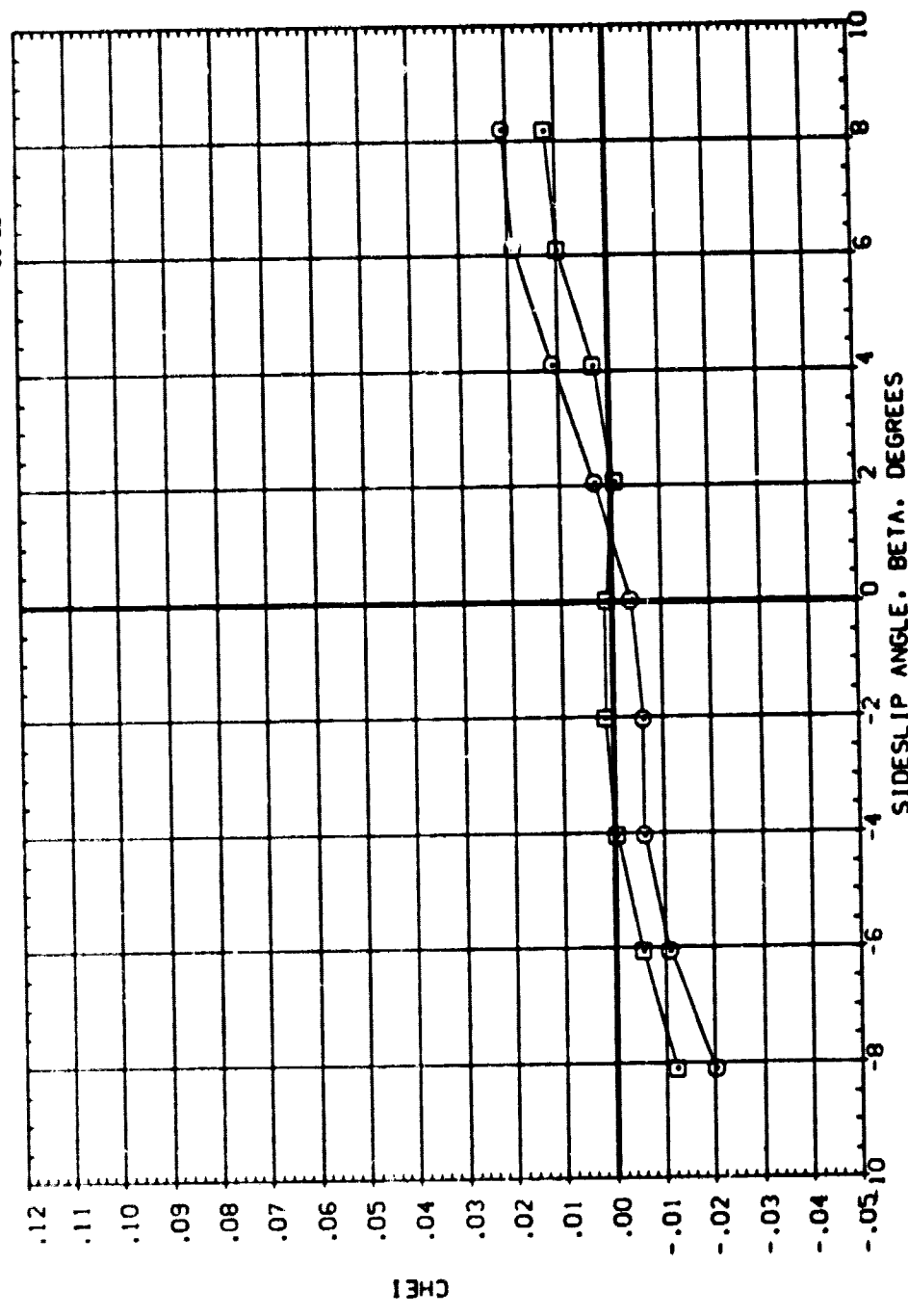


EFFECT OF GRIT ON WINGS

(B)MACH = .90

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION: **CONVEZ20MPAATT353**
 (FA2853) FA28, MSC TWT 556, CONFIG: **CONVEZ20MPAATT353** OR
 (FA2866) FA28, MSC TWT 556, CONFIG: **CONVEZ20MPAATT353** OR

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 3.1612 IN.
 BREF 2.7470 IN.
 AMPD 2.7120 IN.
 YMPD .0000 IN.
 ZMPD .0000 IN.
 SCALE .4000 PERCENT

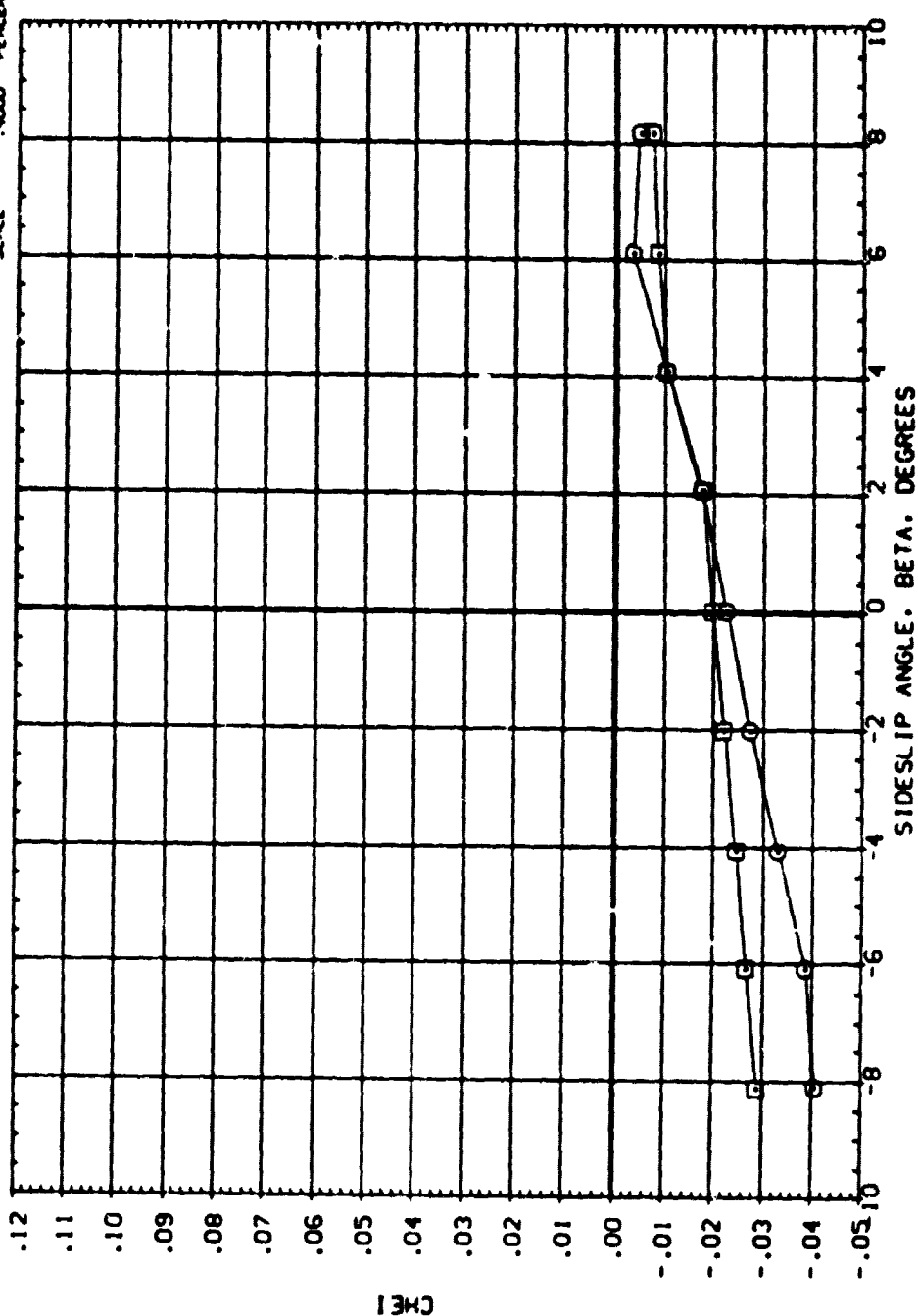


EFFECT OF GRIT ON WINGS

(C)MACH = 1.05

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION:
 (FA2059) PA20: MSFC TWT 556: CONF 16: G3VZ20PAAT1253 OR
 (FA2066) PA20: MSFC TWT 556: CONF 16: G3VZ20PAAT1253 OR

REFERENCE INFORMATION:
 SWEPT 8.1580 SQ. IN.
 LEAF 3.1612 IN.
 SWEPT 3.7470 IN.
 WING 2.7120 IN.
 TWT .0000 IN.
 SCALE .0000 PERCENT

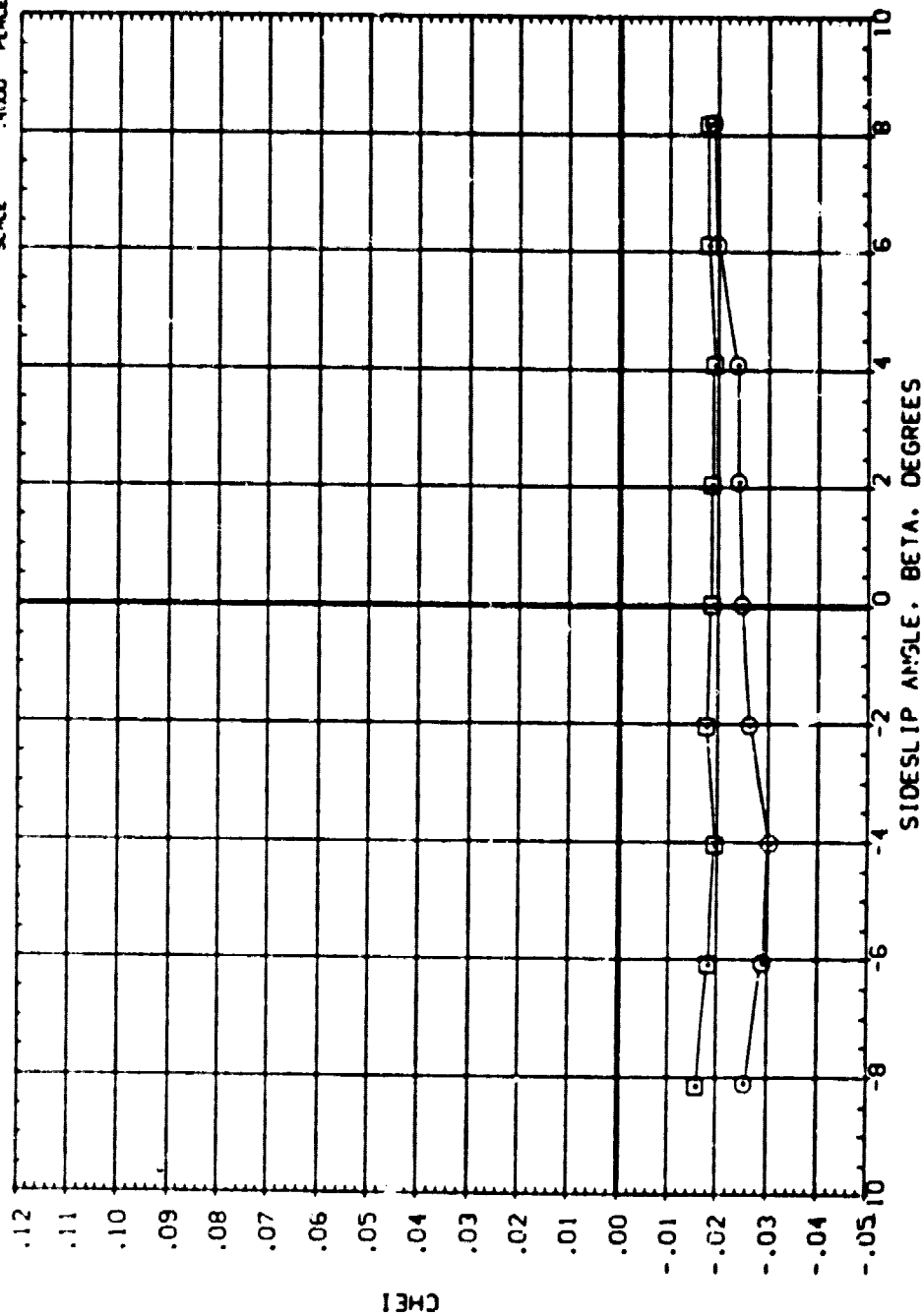


EFFECT OF GRIT ON WINGS

(0)MACH = 1.10


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FA7859) □ FA28. MSFC TVT 656. CONF 16. CNVZE 20-PAAT1753 OR
 (FA7865) □ FA28. MSFC TVT 656. CONF 16. CNVZE 20-PAAT1753 OR

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

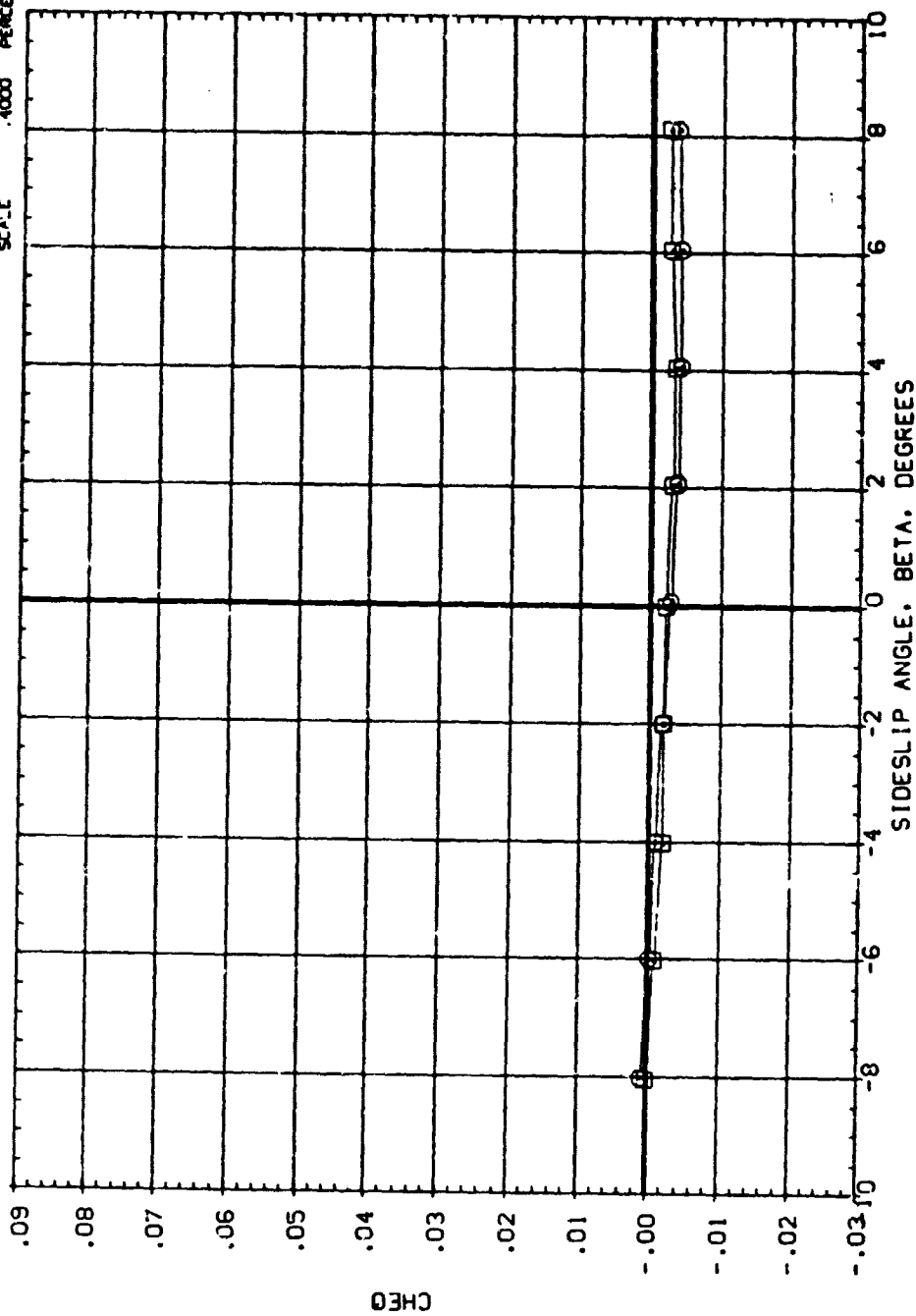


EFFECT OF GRIT ON WINGS

(E)MACH = 1.25

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FA2859) FA28: MSFC 1VT 656; CONF IG: 05VZ22PAPAT1353 OR
 (FA2866) FA28: MSFC 1VT 656; CONF IG: 05VZ22PAPAT1353 OR


REFERENCE INFORMATION
 SREF: 6.1860 50. IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 ARREF: 2.7120 IN.
 TAREF: .0000 IN.
 TAREF: .0000 IN.
 SCALE: .0000 PERCENT

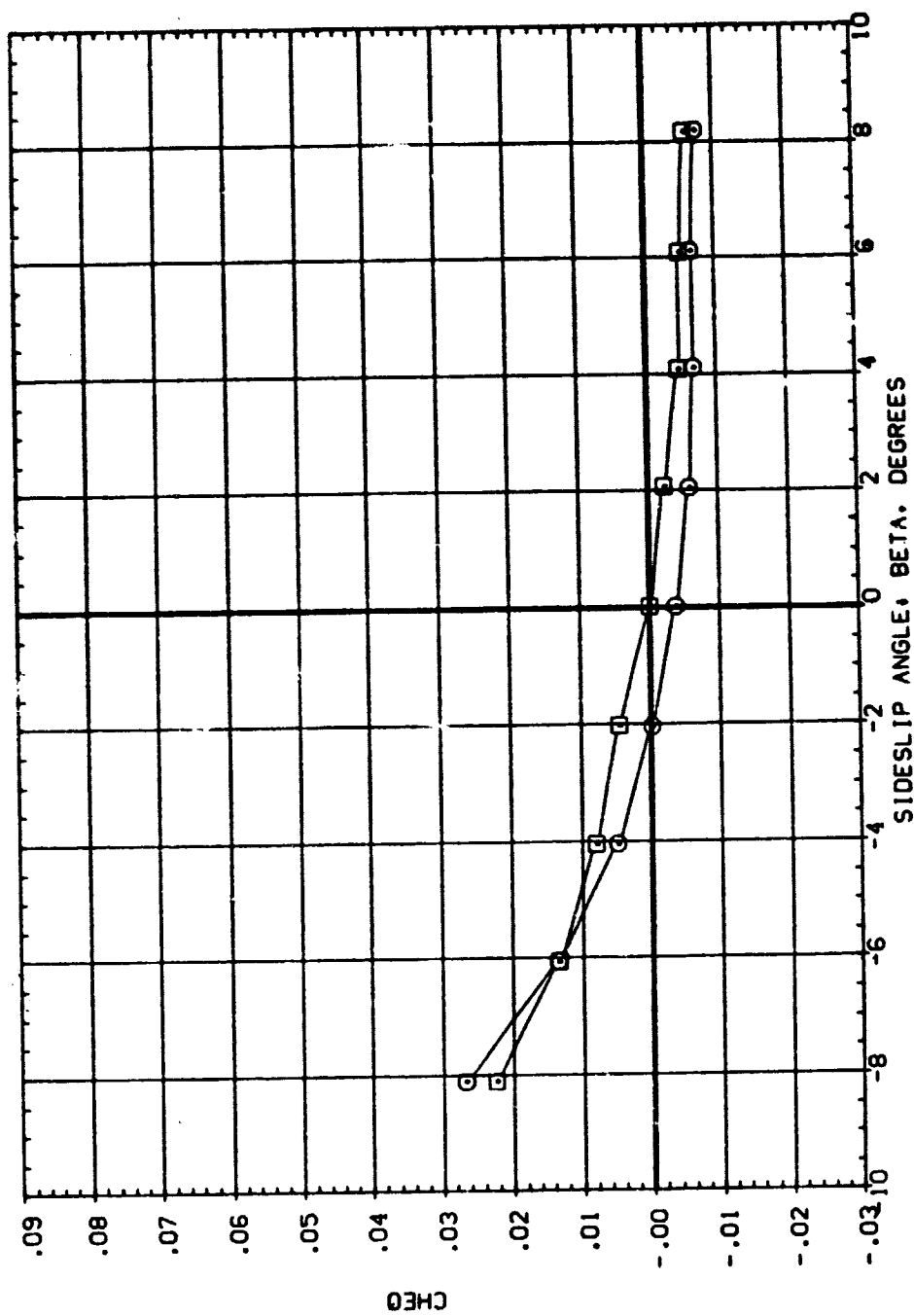


EFFECT OF GRIT ON WINGS

(A)MACH = .60

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DATA SET SYMBOL:  CONFIGURATION DESCRIPTION: FA28, MSFC TWT 656, CONF IG: 0202E2PMPAATT753 OR FA28661
 REFERENCE INFORMATION: SREF: 8.1980 IN, LREF: 5.1612 IN, BREF: 3.7470 IN, VMPP: 2.7120 IN, ZMPP: .0000 IN, SCALE: .4000 PERCENT



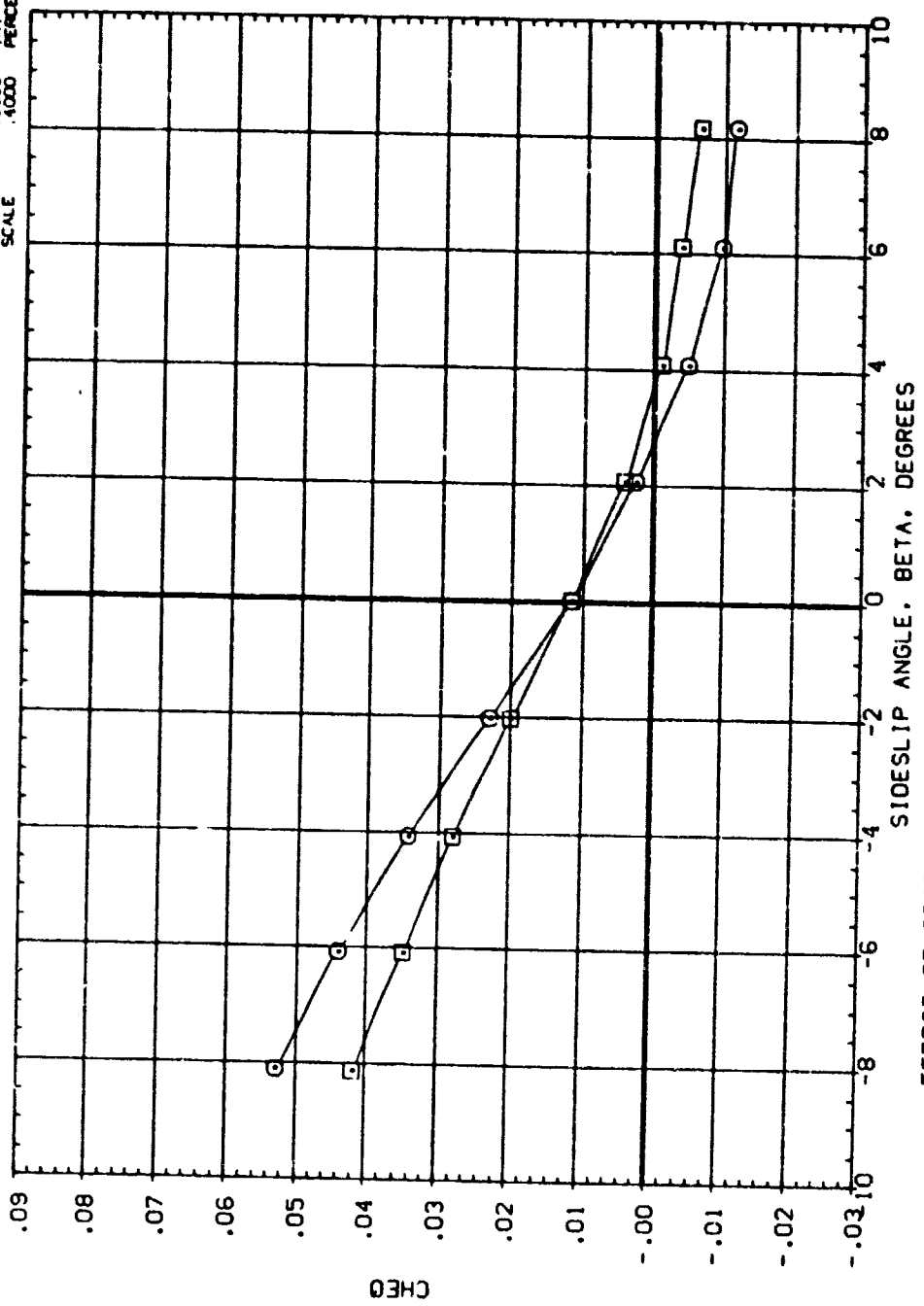
EFFECT OF GRIT ON WINGS

(C)MACH = 1.05

ORIGINAL PAGE IS
OF POOR QUALITY

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION: FA28. MSFC TWT 655. CONF IG. 02NZE2M0PAT11353 OR FA28. MSFC TWT 656. CONF IG. 02NZE2M0PAT11353 OR

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE 1000 PERCENT

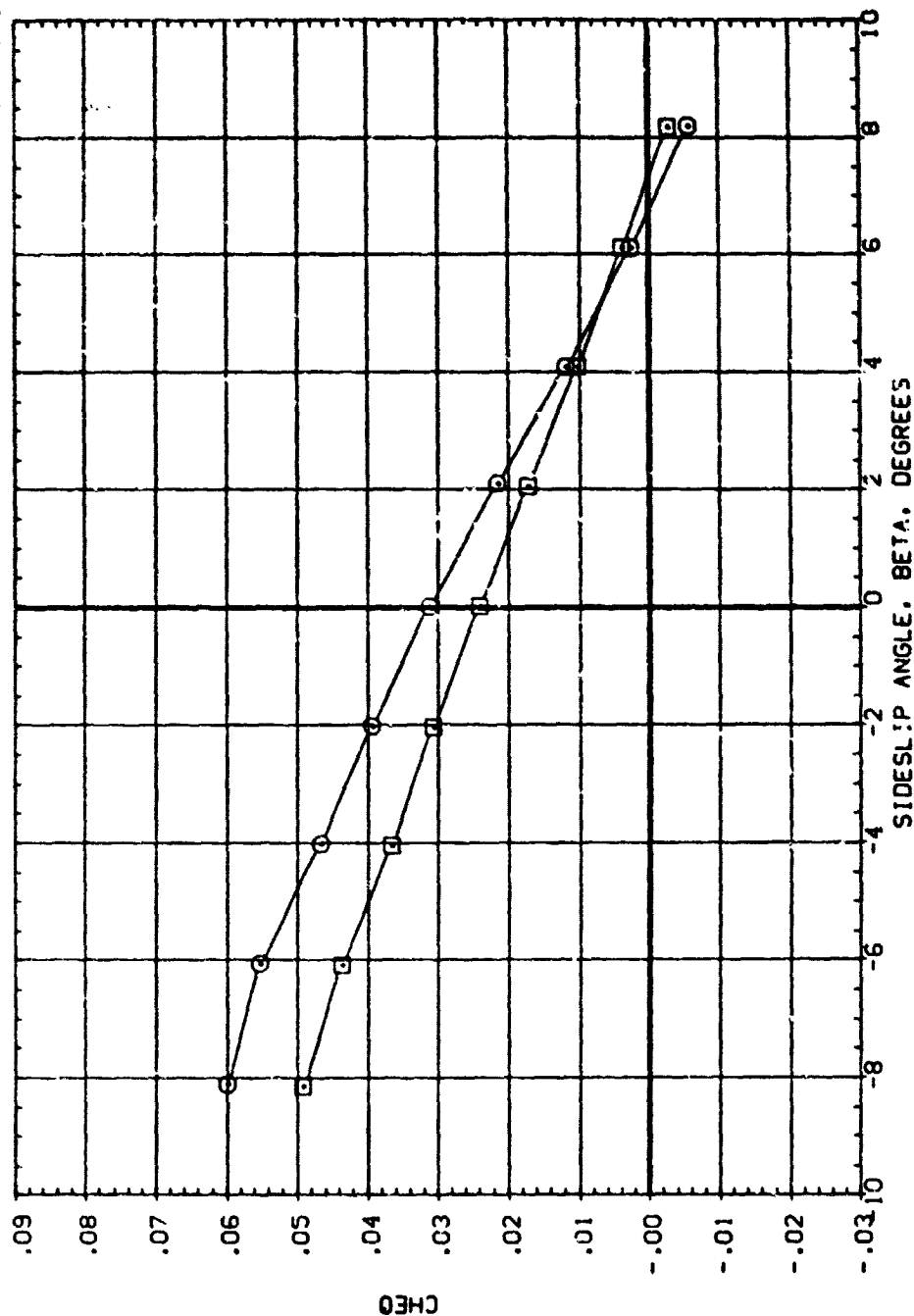


EFFECT OF GRIT ON WINGS

(CD)MACH = 1.10

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION:
 (FA2859) FA28, MSFC TVT 656, CONF IG. 02N2E20PAAT1J53
 (FA2866) FA29, MSFC TVT 656, CONF IG. 02N2E20PAAT1J53 OR

REFERENCE INFORMATION
 SREF 6.1860 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



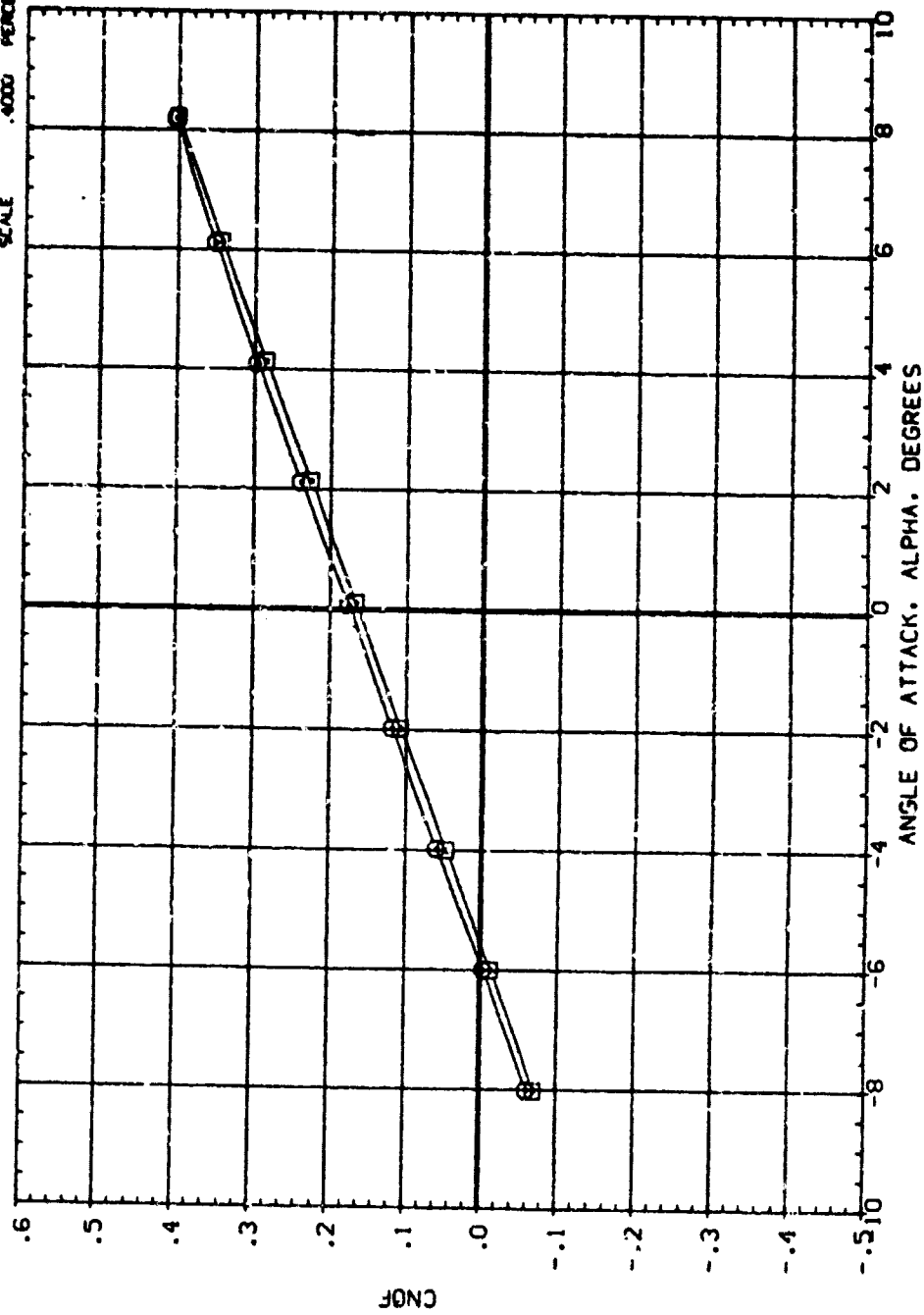
EFFECT OF GRIT ON WINGS

(E)MACH = 1.25

Appendix B
FOREBODY DATA

DATA SET SYMBOL: (FB2005) B
 CONFIGURATION DESCRIPTION: FA28. MSFC INT 656. CONF 16. GZVZ 200001153
 (FB2008) B FA28. MSFC INT 656. CONF 16. GZVZ 200001153

REFERENCE INFORMATION:
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

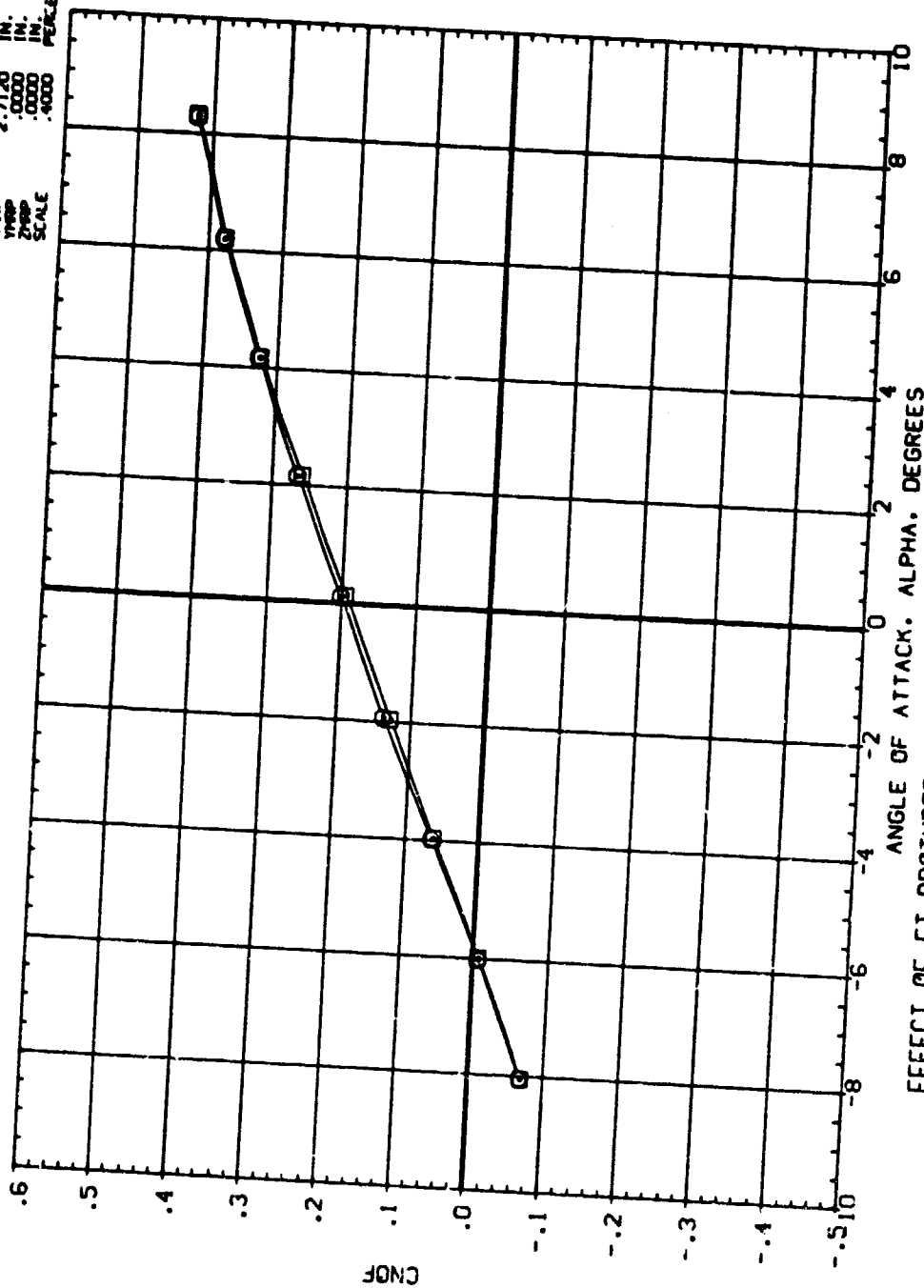


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: **8** CONFIGURATION DESCRIPTION:
 (F82805) FA28, MSC TWT 656, CONF IG. 02NZE20NPAAT1353
 (F82803) FA28, MSC TWT 656, CONF IG. 02NZE20NPAAT1353

REFERENCE INFORMATION
 SREF 6.1880 90. IN
 LREF 3.1512 IN.
 BREF 2.7470 IN.
 YPROP 2.7120 IN.
 ZPROP .0000 IN.
 SCALE .4000 PER DN

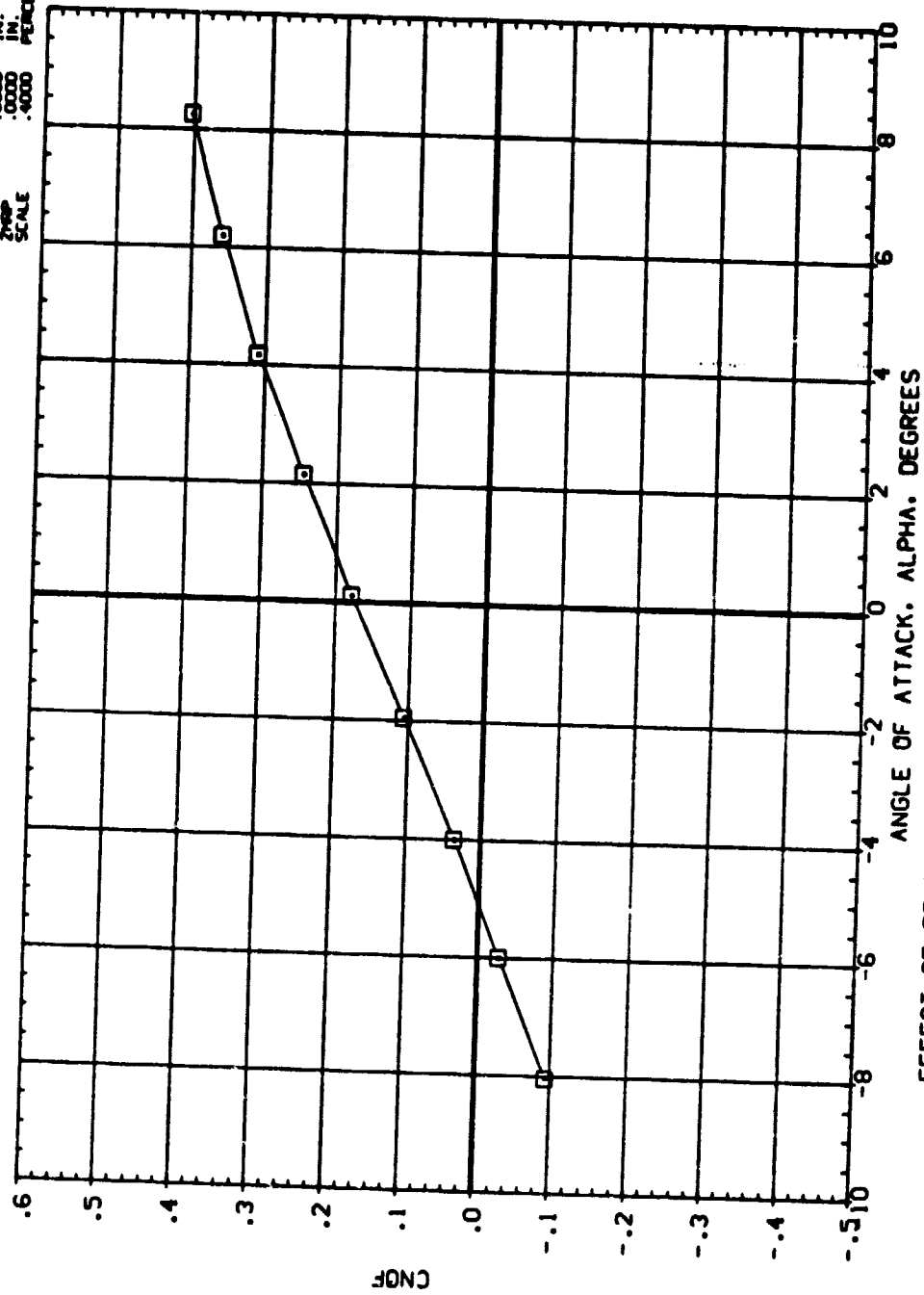


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL: FB2805
 CONFIGURATION DESCRIPTION: DATA NOT AVAILABLE
 FA28. MSC TUT 656. CONF 10. 02V2E2M0A1T353

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN
 LREF 5.1612 IN.
 WREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT

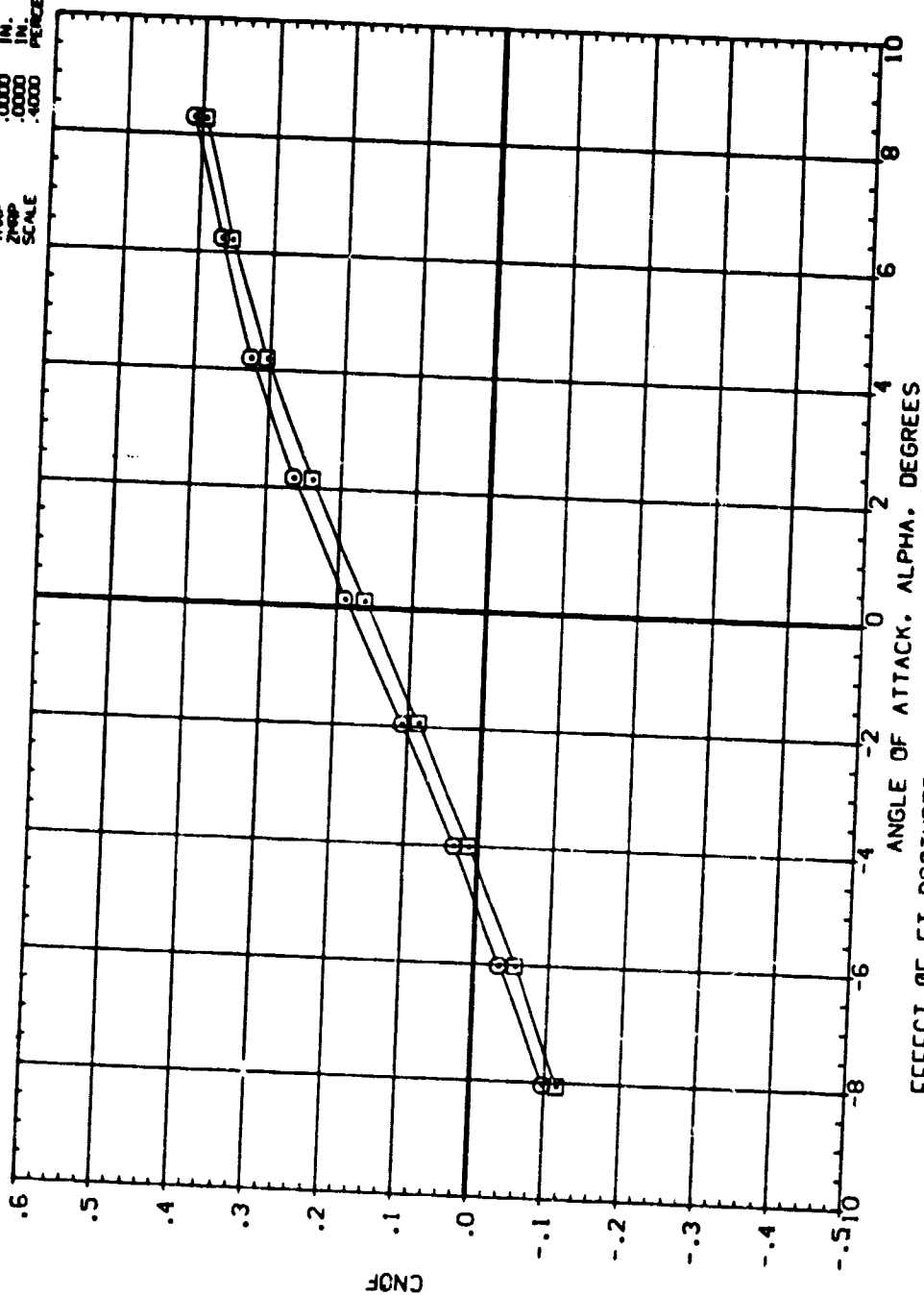


EFFECT OF ET PROTUBERANCES

(C)MACH = .95

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB8005) □ FA28. MSFC TWT 656. CONF 16. 02UZE2AMPAATT353
 (FB8008) □ FA28. MSFC TWT 656. CONF 16. 02UZE2AMPAATT353

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

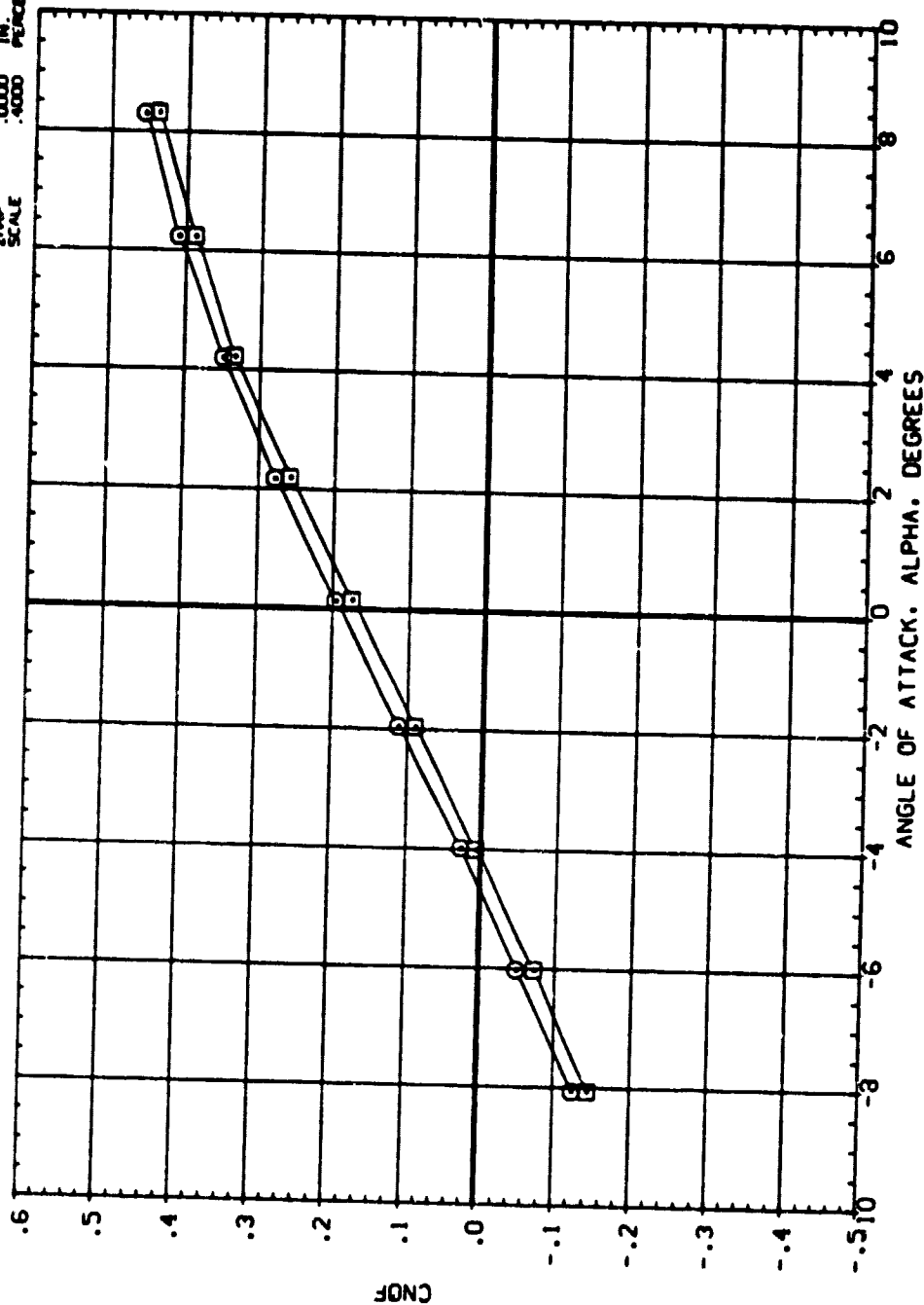


EFFECT OF ET PROTUBERANCES

(O)MACH = 1.05

DATA SET SYMBOL: (FB2805) (FB2808)
 CONFIGURATION DESCRIPTION: FA28. MSFC TWT 655. COF IG. 024224-04AATT253
 FA28. MSFC TWT 656. COF IG. 024224-04AATT353

REFERENCE INFORMATION
 SREF 5.1800 IN.
 LREF 3.1612 IN.
 BREF 2.7120 IN.
 XPROP .0000 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE 4000 PERCENT

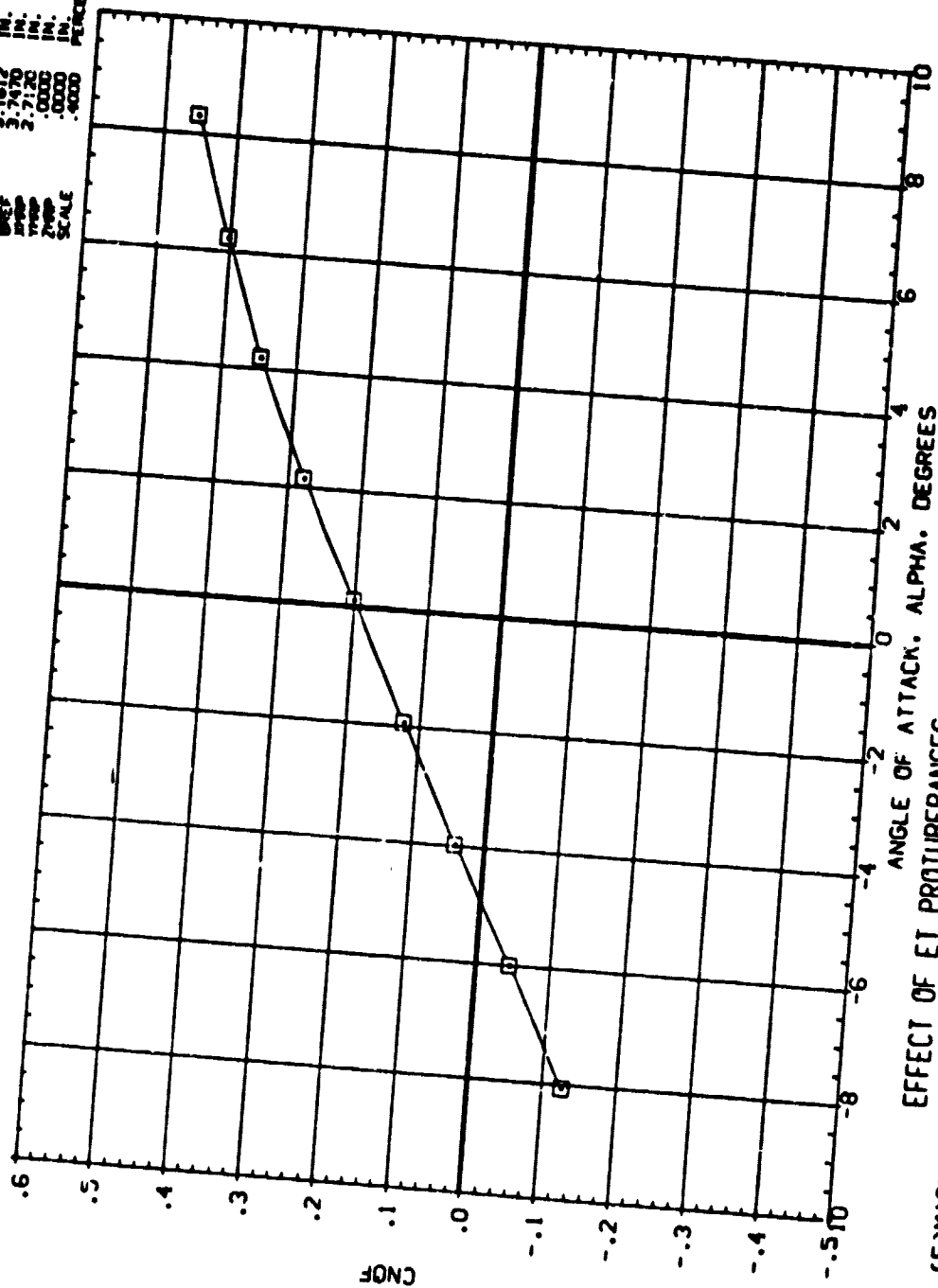


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.11

DATA SET SYMBOL: 0
 CONFIGURATION DESCRIPTION: DATA NOT AVAILABLE
 (FB2805) (FB2805) FA26. MSC TWT 656. CONFIG. 002E2M0A117353

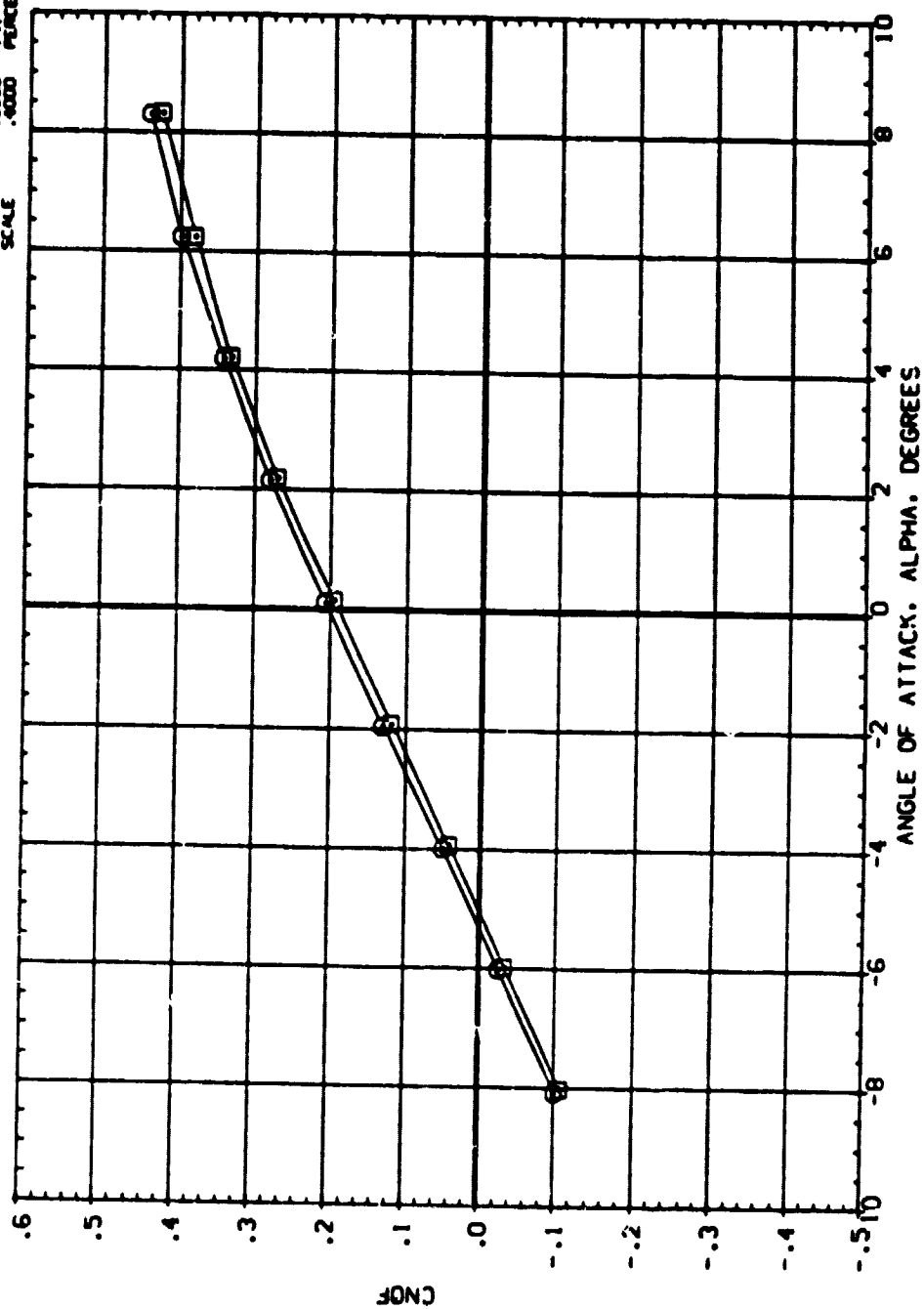
REFERENCE INFORMATION
 SHEET 6-1580 50 IN
 UNIT 1612 10 IN
 DATE 3-7470 10 IN
 TIME 2-7120 10 IN
 ZONE .0000 10 IN
 SCALE .0000 10 IN
 PERIOD .4000 10 IN



EFFECT OF ET PROTUBERANCES
 (F)MACH = 1.15

(FB2805) FA28. M5FC TWT 656. CONF. 02VZE20WAA1T353
 (FB2808) FA28. M5FC TWT 656. CONF. 02VZE20WPA1T353

REFERENCE INFORMATION	
SWT	6.1980 IN.
LAST	5.1612 IN.
SWT	3.7470 IN.
WSP	2.7120 IN.
WSP	.0000 IN.
WSP	.0000 IN.
SCALE	.0000 POUNDS



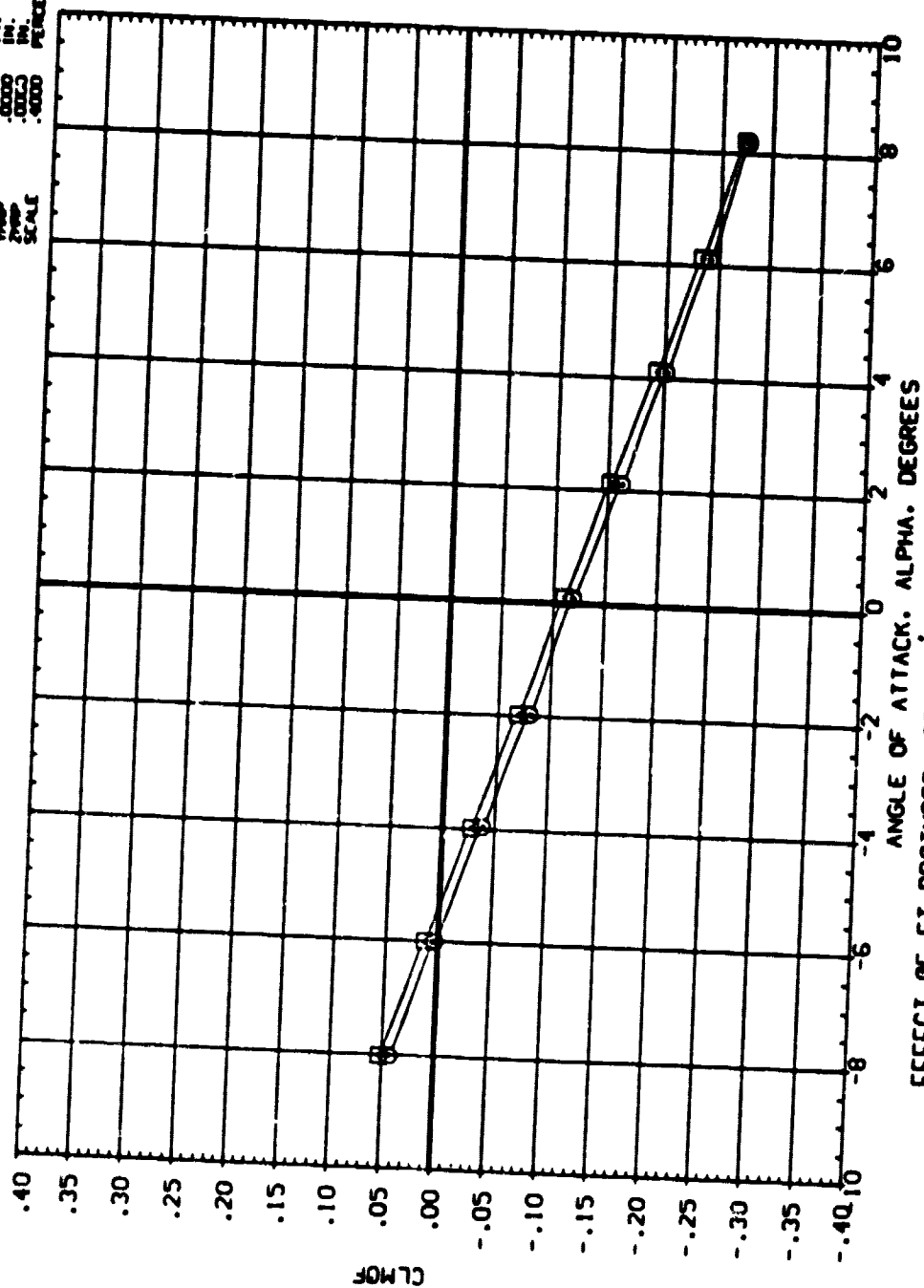
EFFECT OF ET PROTUBERANCES

(G)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
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100	...

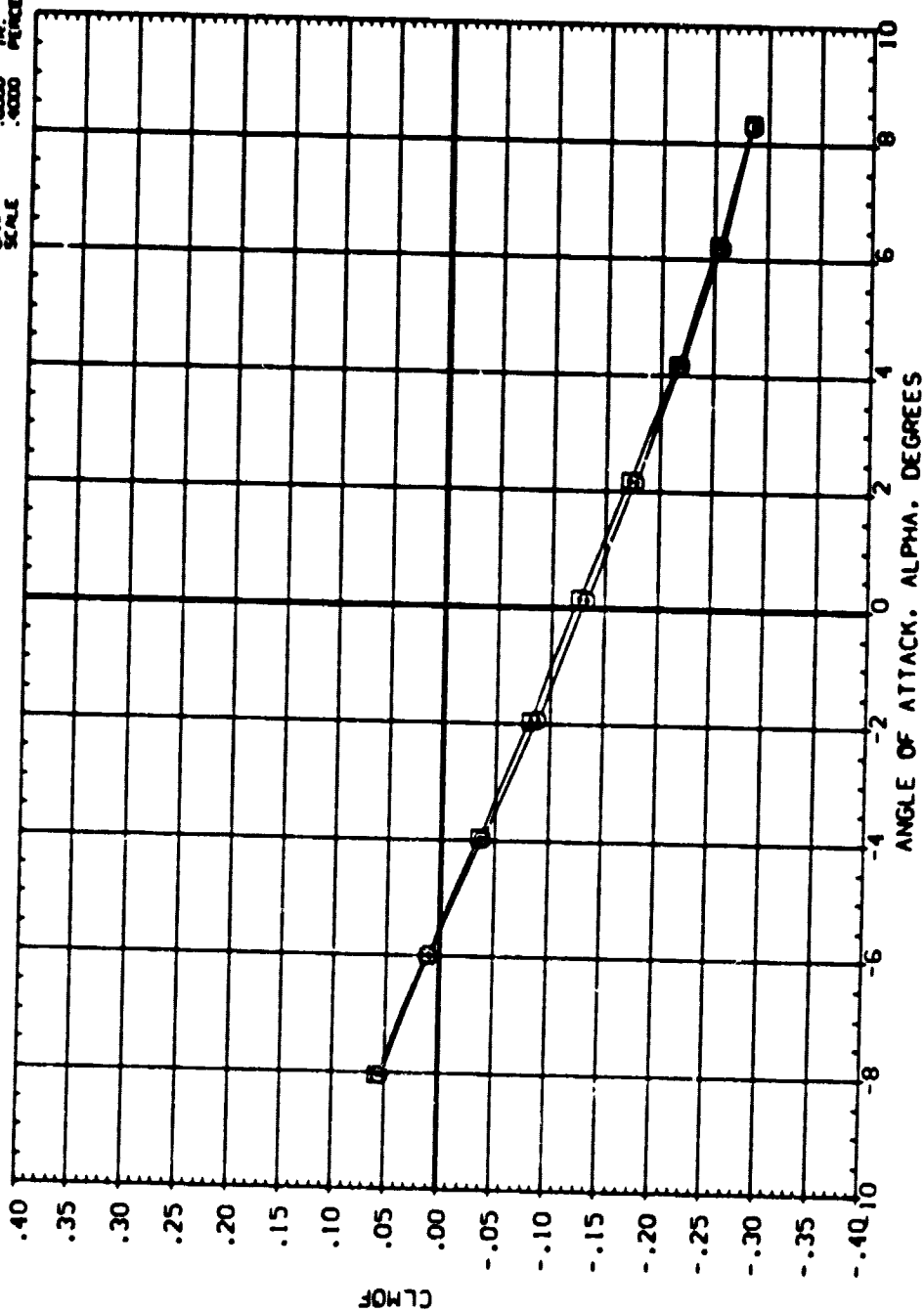
FA28.	MSFC	TWT	656.	CONF.	IG.
FA28. <td>MSFC <td>TWT <td>656. <td>CONF. <td>IG. </td></td></td></td></td>	MSFC <td>TWT <td>656. <td>CONF. <td>IG. </td></td></td></td>	TWT <td>656. <td>CONF. <td>IG. </td></td></td>	656. <td>CONF. <td>IG. </td></td>	CONF. <td>IG. </td>	IG.

REFERENCE INFORMATION	
NET	8.190 IN.
LINE	9.1612 IN.
SIZE	2.7470 IN.
WAVE	2.7120 IN.
TEMP	.0000 IN.
TIME	.0000 IN.
SCALE	.0000 PERIOD


$$C_{\text{MACH}} = 0.60$$

DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (FB2005) 1 FB2005: MFC TWT 656: CONF 1G: CONF 20/MAAT153
 (FB2005) 1 FB2005: MFC TWT 656: CONF 1G: CONF 20/MAAT153

REFERENCE INFORMATION
 REF: 9.1580 50. IN
 LIFT: 5.1612 IN.
 DRAG: 3.7470 IN.
 MOM: 2.7120 IN.
 WPM: .0000 IN.
 SCALE: .0000 IN.
 PERIOD: .0000

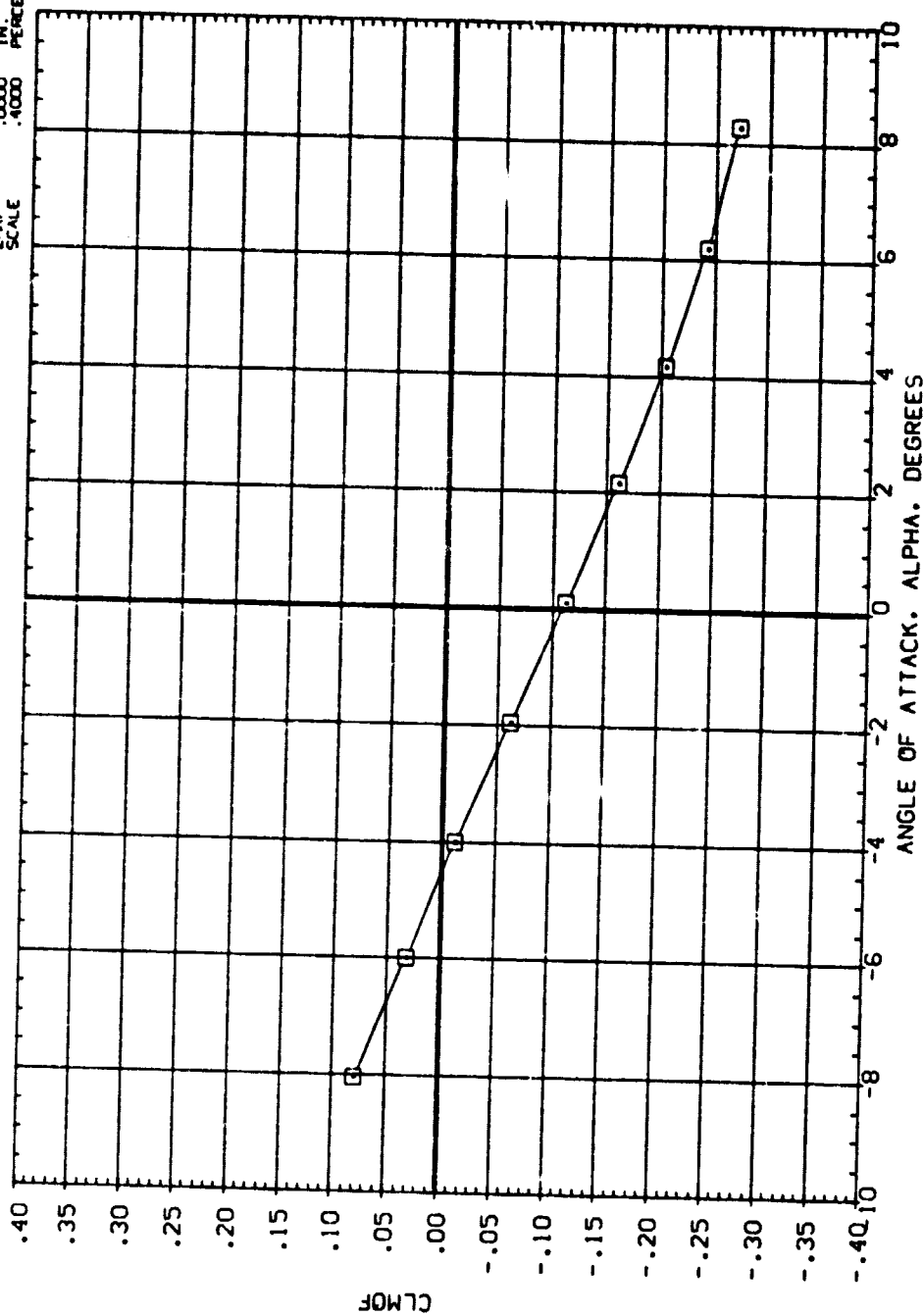


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL: (FB2805)
 CONFIGURATION DESCRIPTION: DATA NOT AVAILABLE
 (FB2808) FA26, MSC 101 ESS, CONFIG. 02VZ2PMPAA17353

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

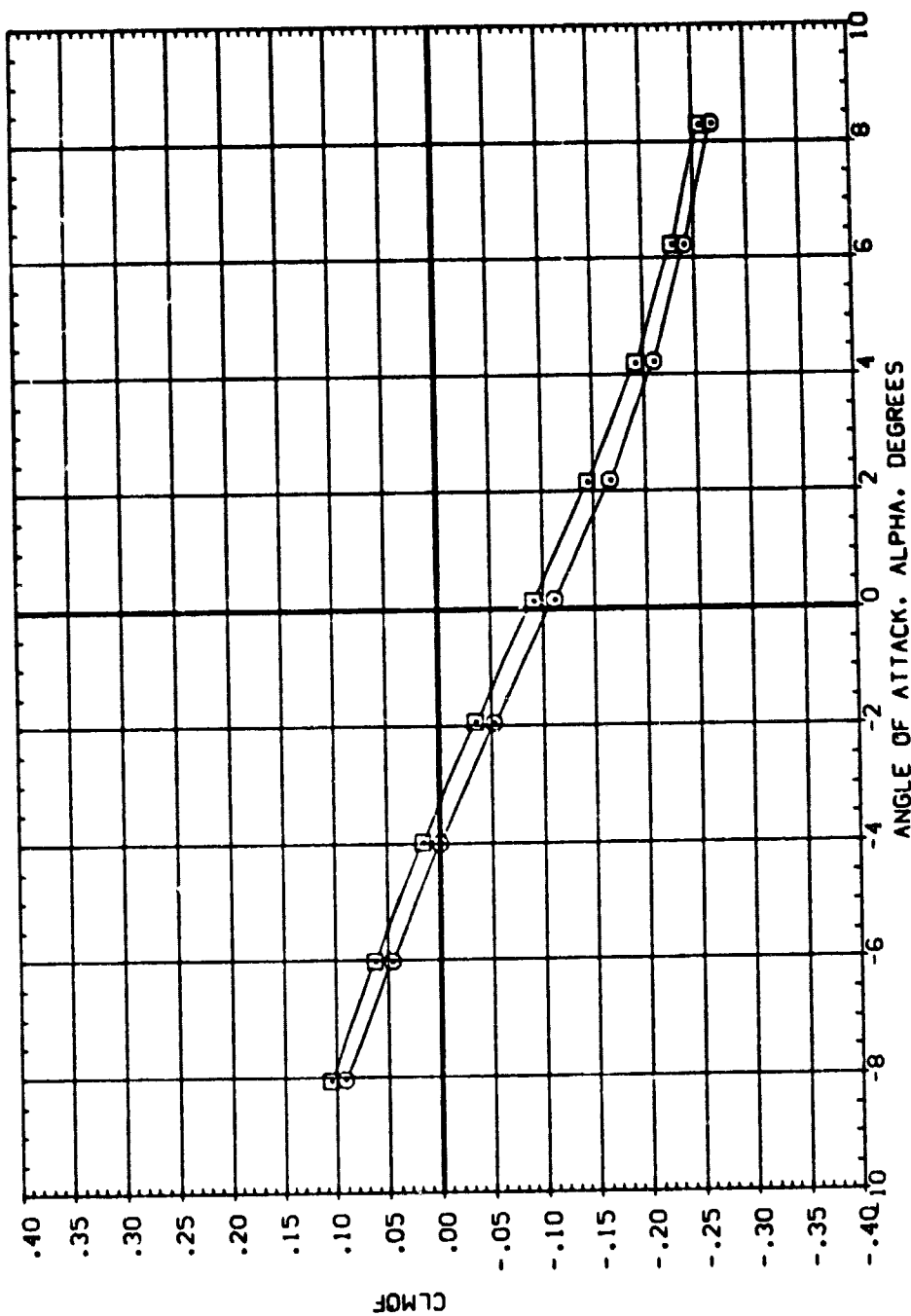


EFFECT OF ET PROTUBERANCES

(C)MACH = .95


REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (F8205) 8 FA28. MSFC TVT 656. CONF IG. 02VZ22NVAAT1353
 (F8205) 8 FA28. MSFC TVT 656. CONF IG. 02VZ22NVAAT1353

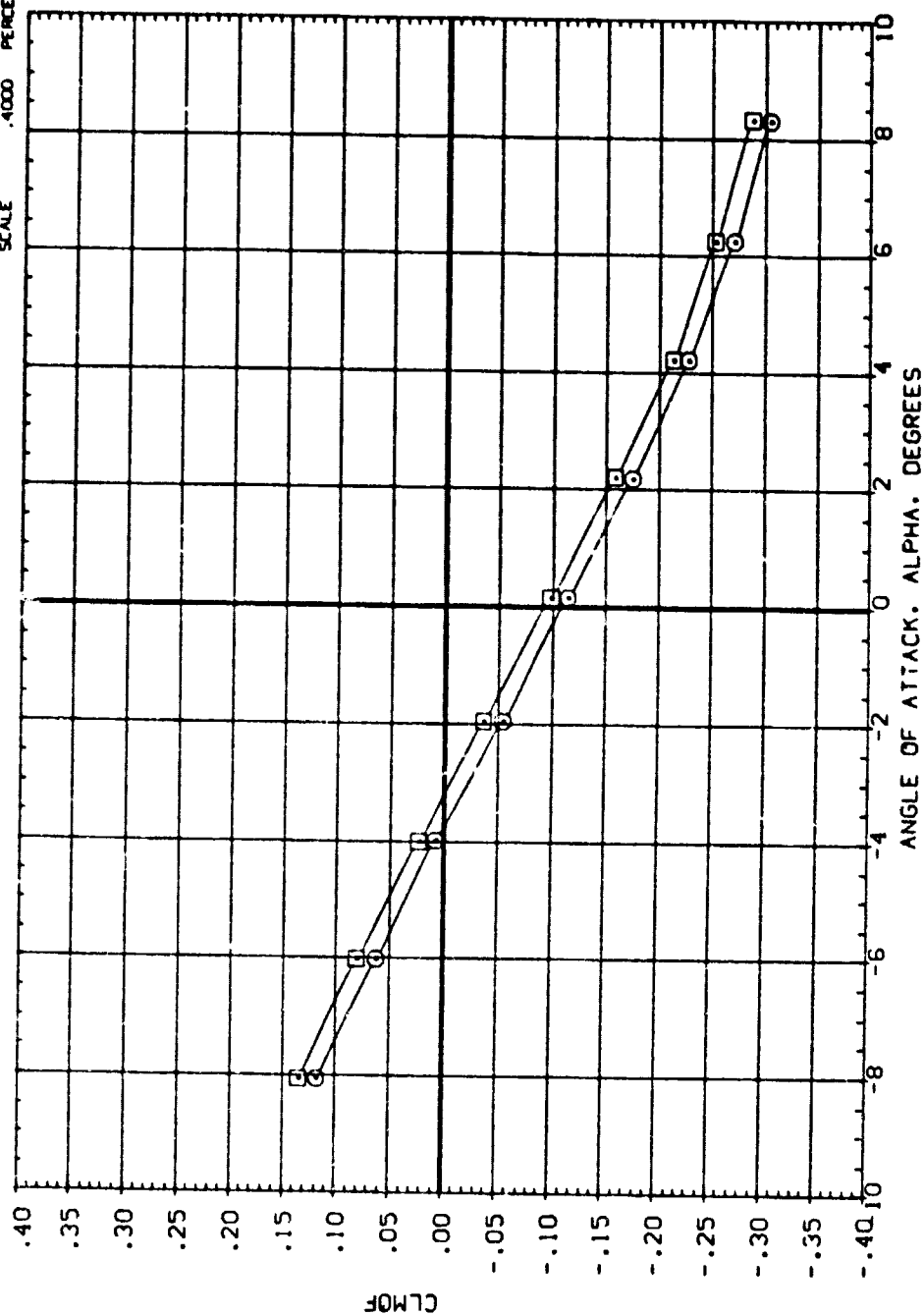


EFFECT OF ET PROTUBERANCES

(0)MACH = 1.05

DATA SET SYMBOL: (FB2805) (FB2808)  CONFIGURATION DESCRIPTION: FA28: MSFC TWT 656, CONF 10: 02VZ2PAAAT1753 FA28: MSFC TWT 656, CONF 10: 02VZ2PAAAT1753

REFERENCE INFORMATION
 SREF: 6.1580 IN.
 LBREF: 5.1612 IN.
 BRREF: 3.7470 IN.
 XPRP: 2.7120 IN.
 YPRP: .0000 IN.
 ZPRP: .0000 IN.
 SCALE: .4000 PERCENT

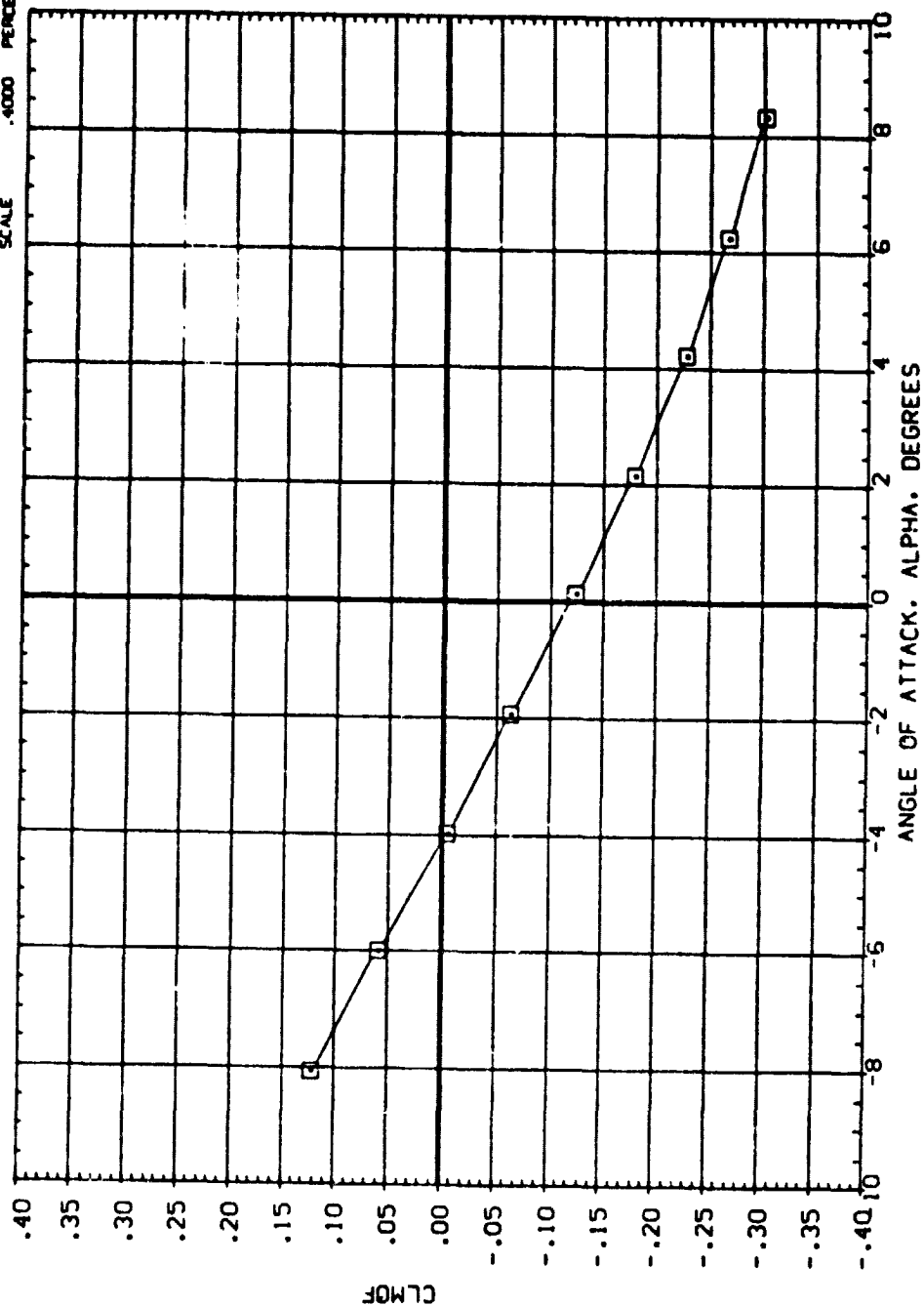


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.11

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2805) DATA NOT AVAILABLE
 (FB2808) 8 FA28. MSFC TVT 656. CONF 10. 02V2E2PAPATT353

REFERENCE INFORMATION
 SREF 6.1880 90. IN
 LREF 3.1612 IN.
 BREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

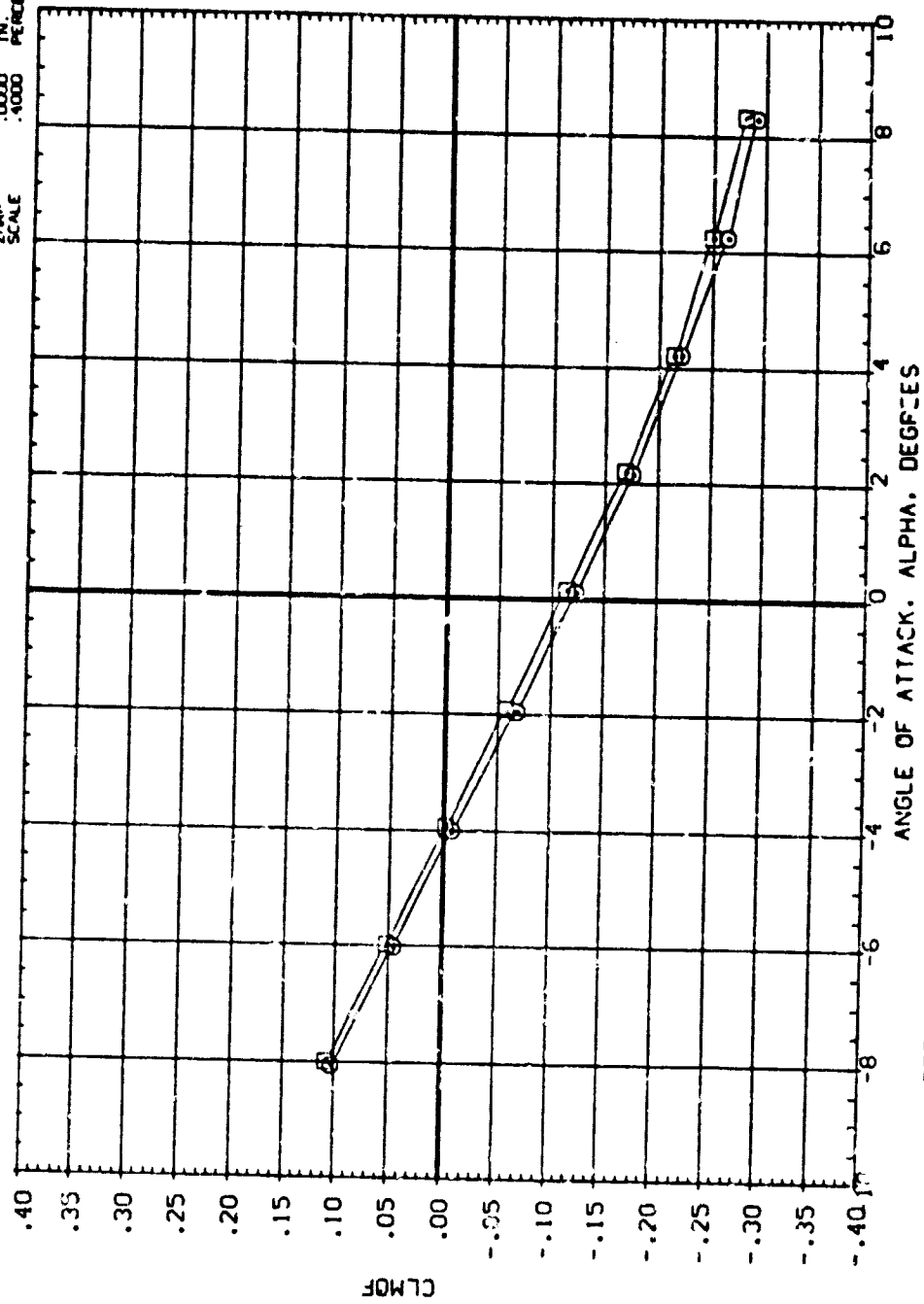


EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15

DATA SET SYMBOL: FB2805
 CONFIGURATION DESCRIPTION: FA28. MSFC TVT 656. CONF IG. 02VZE20VAATT353
 (FB2808) B FA28. MSFC TVT 656. CONF IG. 02VZE20VAATT353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 WREF 3.7470 IN.
 VREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

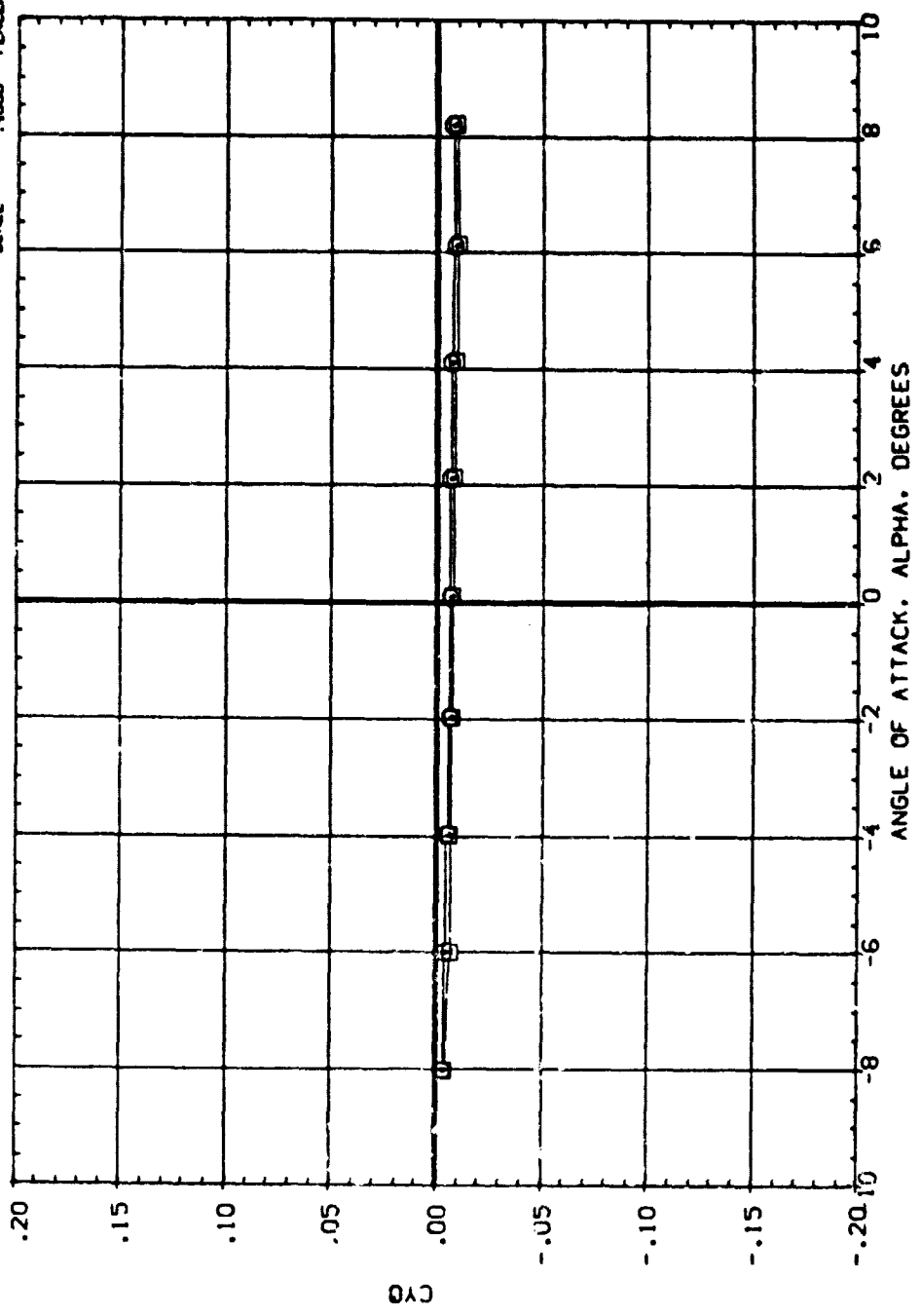


EFFECT OF ET PROTUBERANCES

(GMACH = 1.25)


DATA SET SYMBOL: 1782005
 CONFIGURATION DESCRIPTION: FA28. MSFC TVT 656. CONF IG. 02NZE2MVAATTJ53
 1782008) □ FA28. MSFC TVT 556. CONF IG. 02NZE2MVAATTJ53

REFERENCE INFORMATION:
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 SREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 FEET

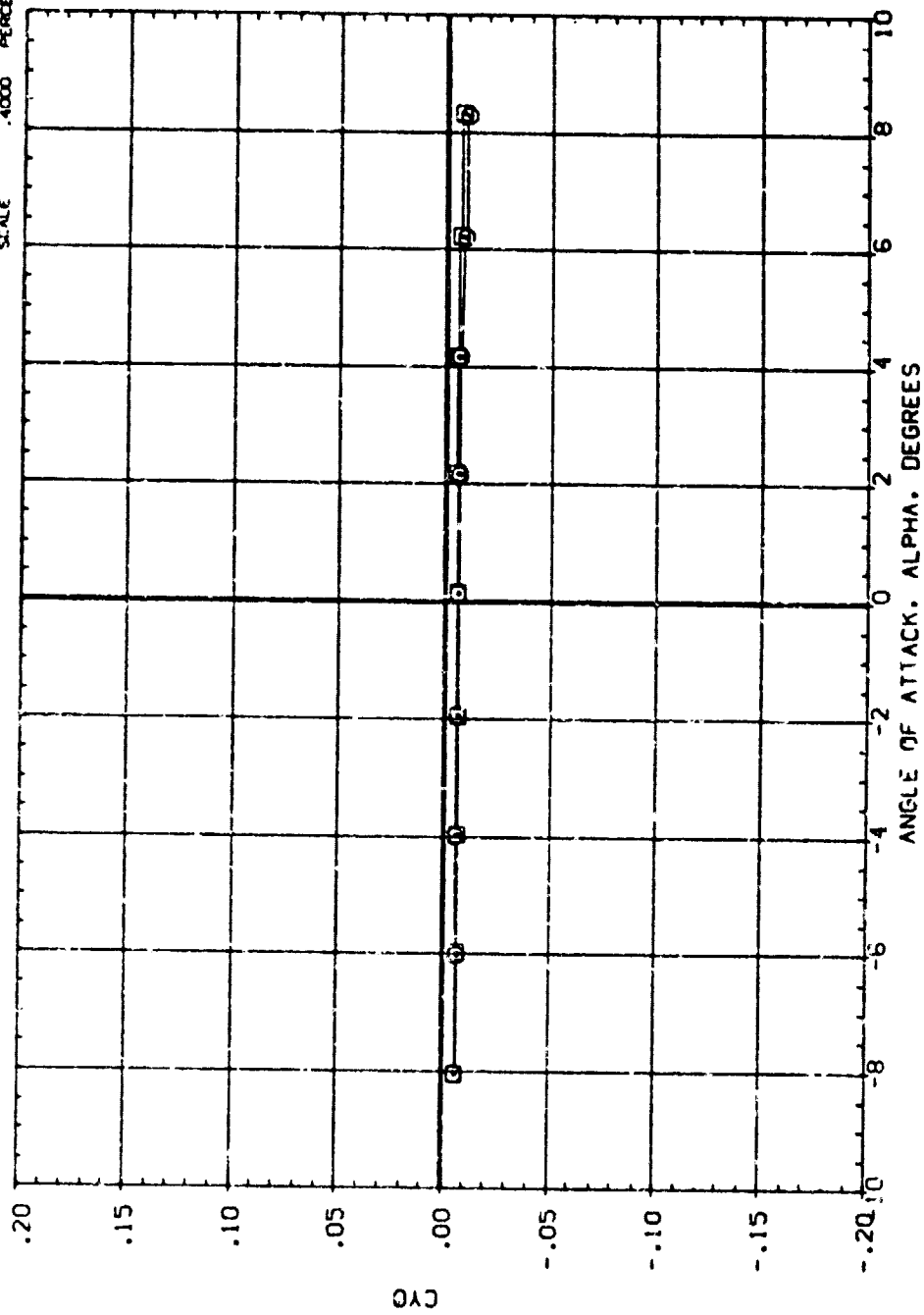


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: (FB2805)
 (FB2808)  CONFIGURATION DESCRIPTION:
 FA28. M5/C INT 656. CONF G: 02NZE2000ATT353
 FA28. M5/C INT 656. CONF G: 02NZE2000ATT353

REFERENCE INFORMATION:
 LREF 6.1980 SC. IN.
 BREF 5.1612 IN.
 MREF 3.7470 IN.
 TREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

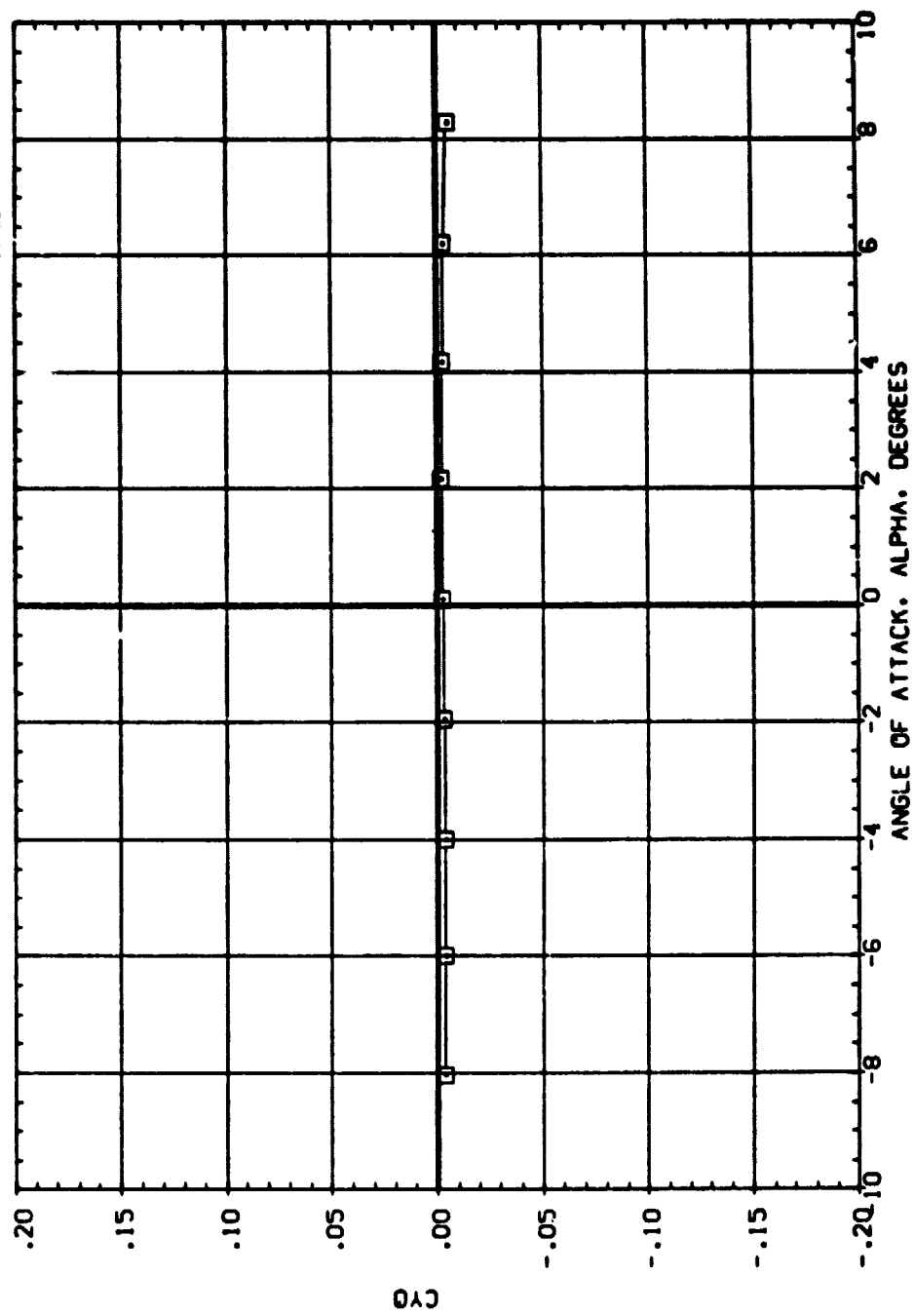


EFFECT OF FT PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2805) DATA NOT AVAILABLE
 (FB2808) □ FA28. MSFC TWT 656. CONFIG. 02VZ2PAPAA17353

REFERENCE INFORMATION
 SREF 5.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

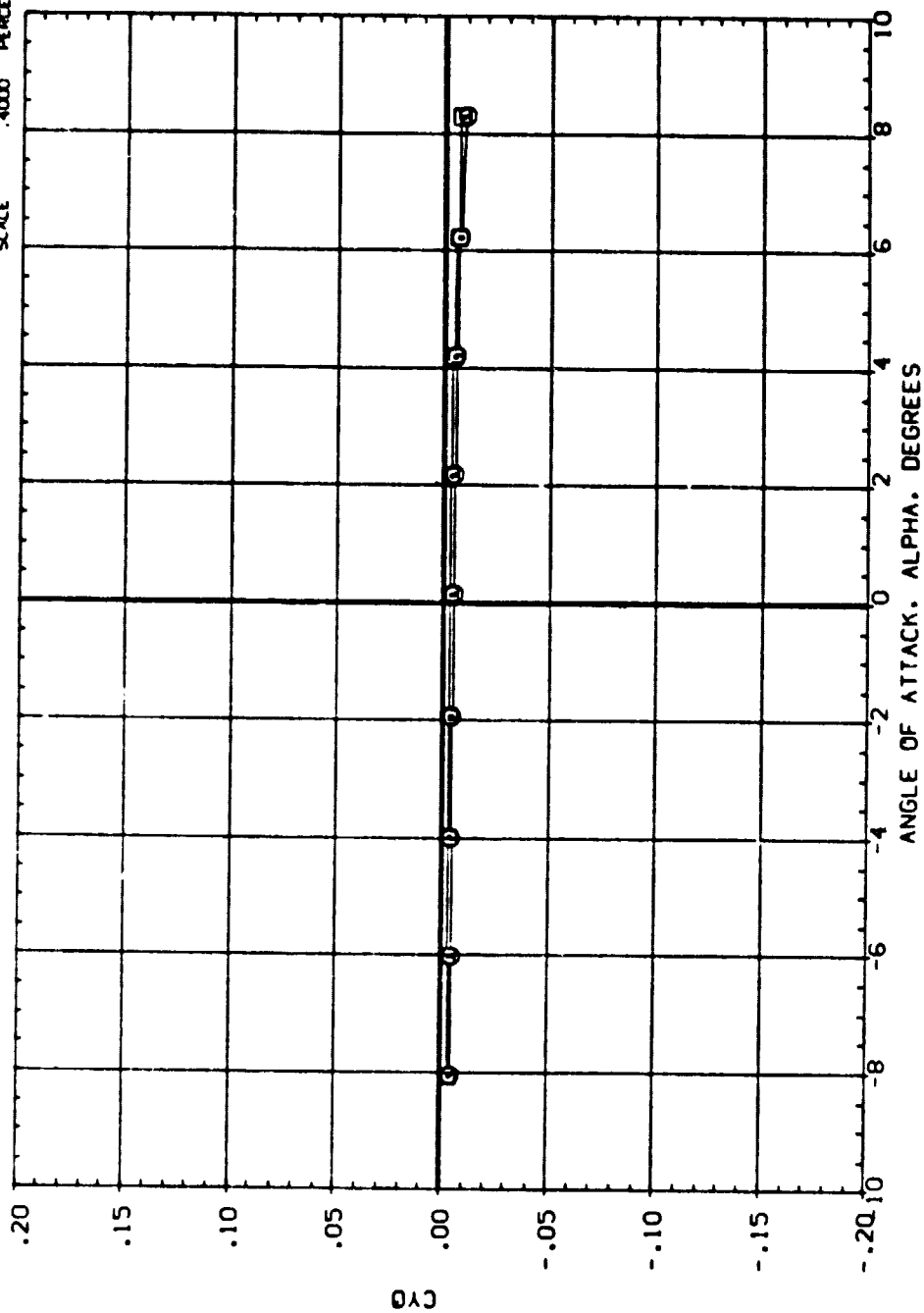


EFFECT OF ET PROTUBERANCES

(C)MACH = .95

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2805) □ FA28: MSFC 1VT 656, CONF 1G. 02VZE2MAA1T353
 (FB2808) □ FA28: MSFC 1VT 656, CONF 1G. 02VZE2PA1T353

REFERENCE INFORMATION
 SREF 5.1980 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

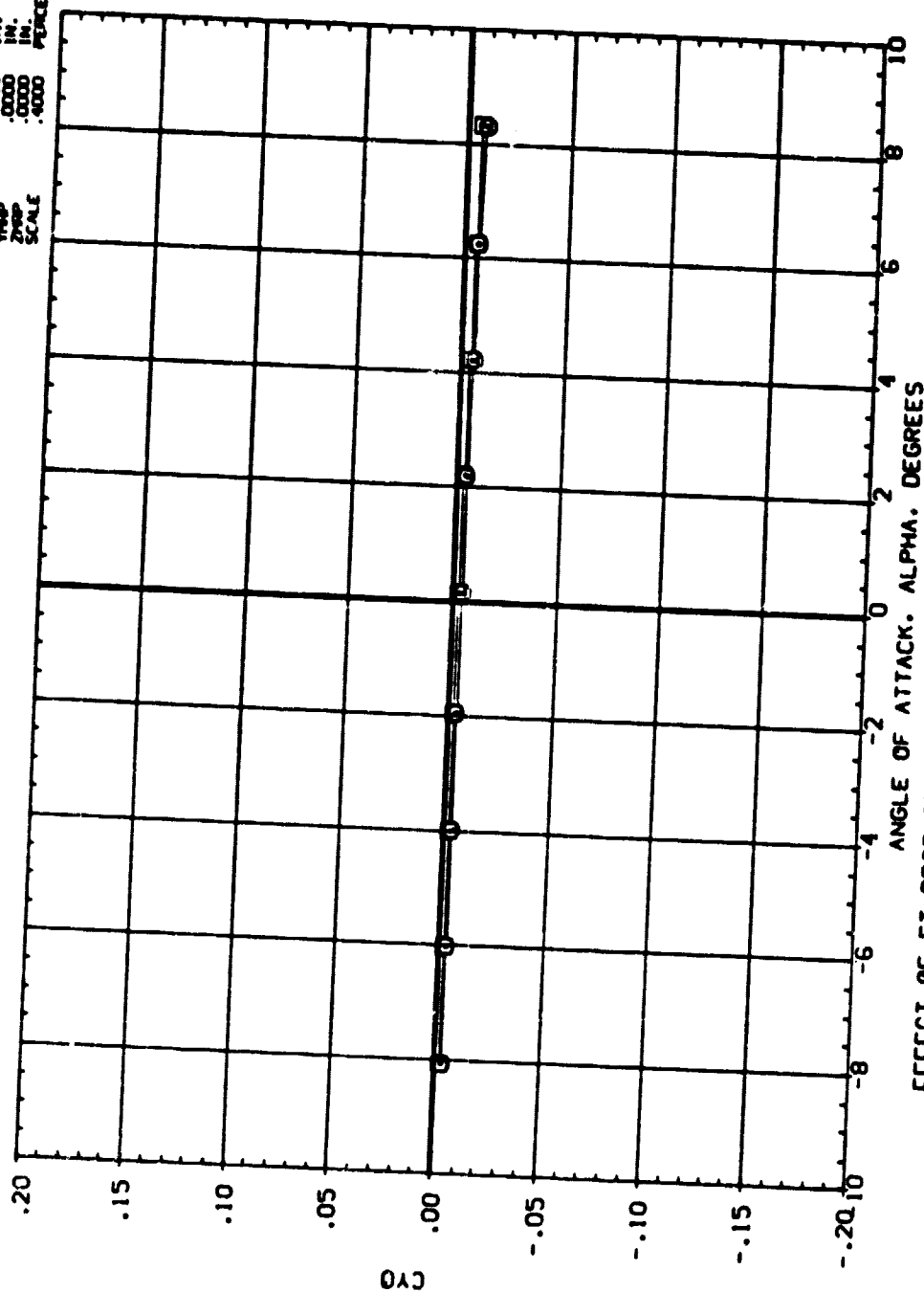


EFFECT OF ET PROTRUBERANCES

(0)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (P82805) 8 FA28. MSFC TWT 656. CONFIG. ORVZ2MMAATT353
 (P82808) 8 FA28. MSFC TWT 656. CONFIG. ORVZ2MMAATT353

REFERENCE INFORMATION
 SREF 8.1880 50. IN.
 LREF 5.1612 IN.
 BREF 3.7478 IN.
 WREF 2.7120 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

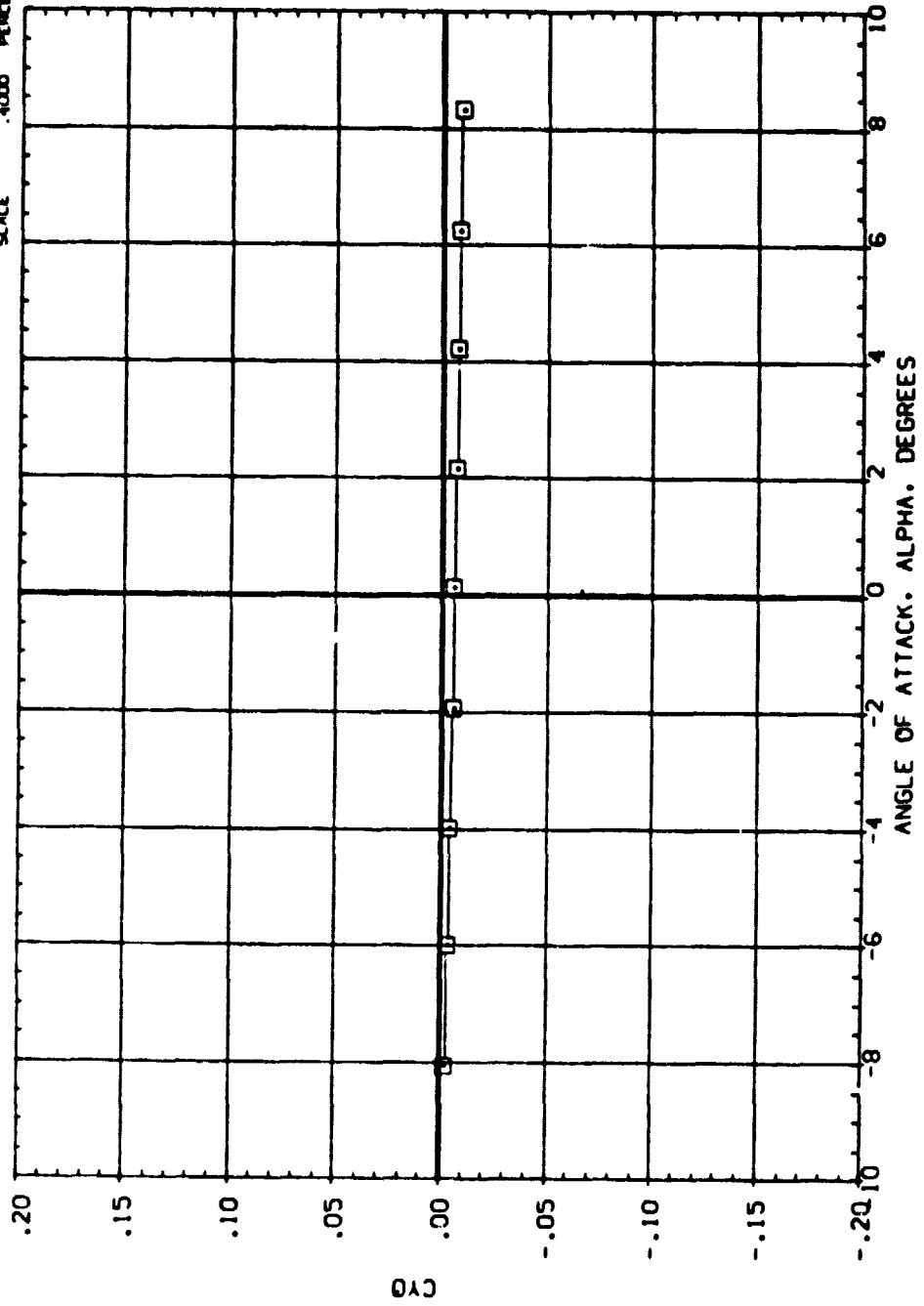


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.11

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2805) DATA NOT AVAILABLE
 (FB2808) PA28, P5FC 1W1 656, CONF IG. 0202E2PAPAA11353

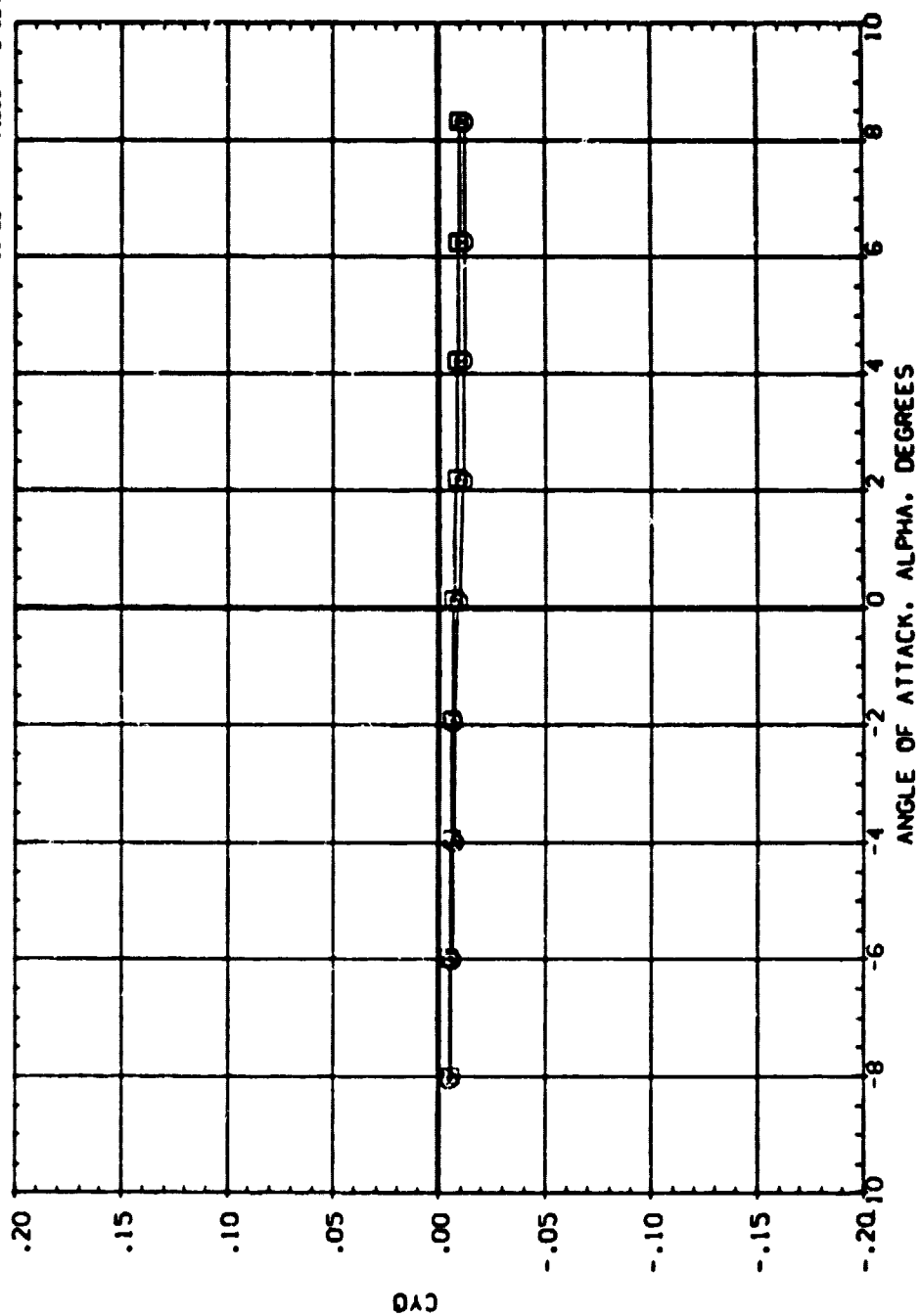
REFERENCE INFORMATION
 SHEET 6.1280 50. IN.
 LINEF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15

REFERENCE INFORMATION		
SET	6.1980	IN.
LINE	5.1612	IN.
BLK	3.7470	IN.
APP	2.7120	IN.
WAP	.0000	IN.
ZWAP	.0000	IN.
SCALE	.0000	PERCENT

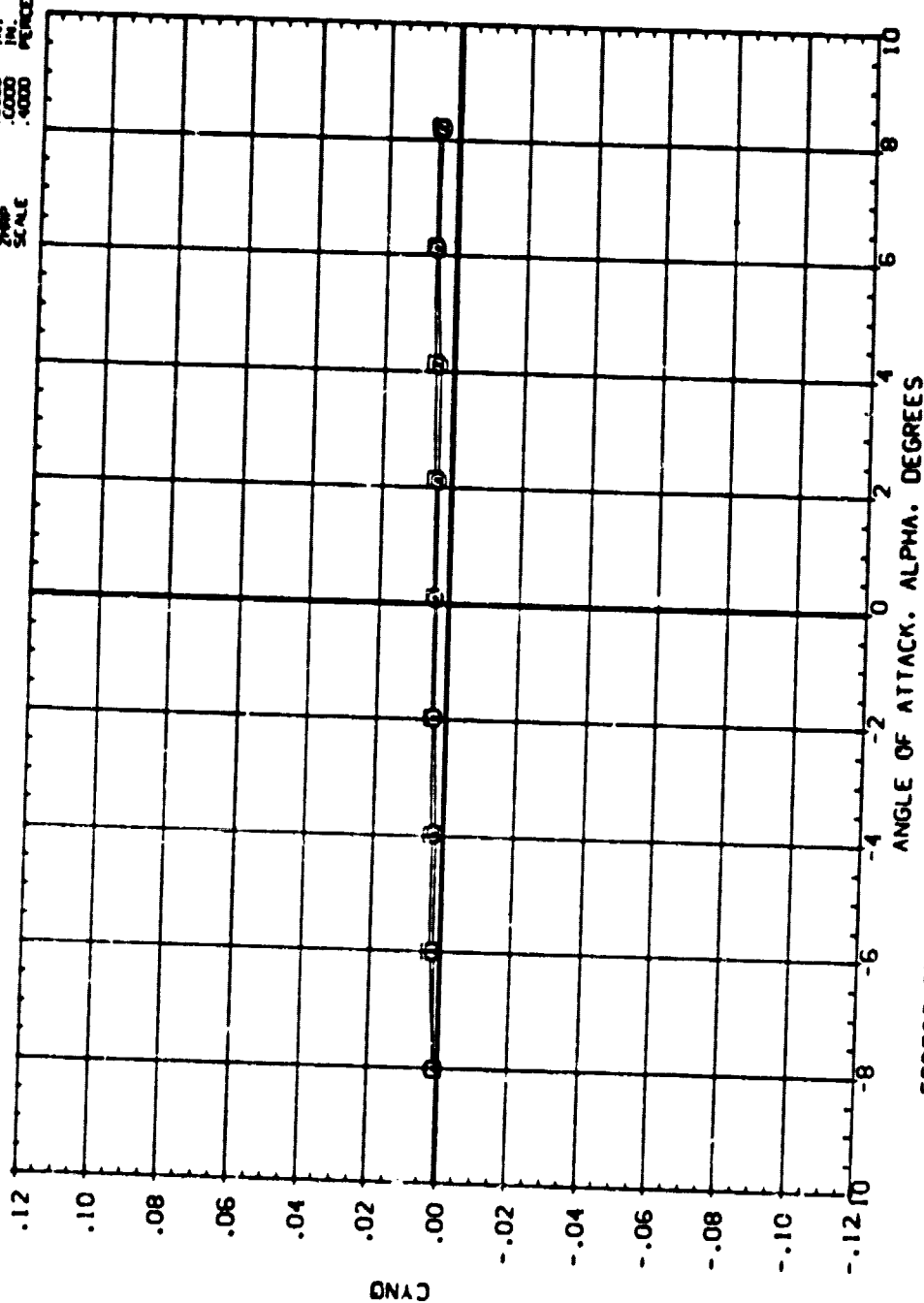


EFFECT OF ET PROTUBERANCES

$$(G)_{MACH} = 1.25$$

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (F82005) 8 FA28. MSFC 141 656. CONF.10. ONZE MANAAT123
 (F82008) 8 FA28. MSFC 141 656. CONF.10. ONZE MANAAT123

REFERENCE INFORMATION
 SRT 9.1380 50. IN
 LRT 5.1612 50. IN
 SRT 2.7120 50. IN
 LRT 2.7120 50. IN
 WPP .0000 50. IN
 ZPP .0000 50. IN
 SCALE .0000 PERCENT

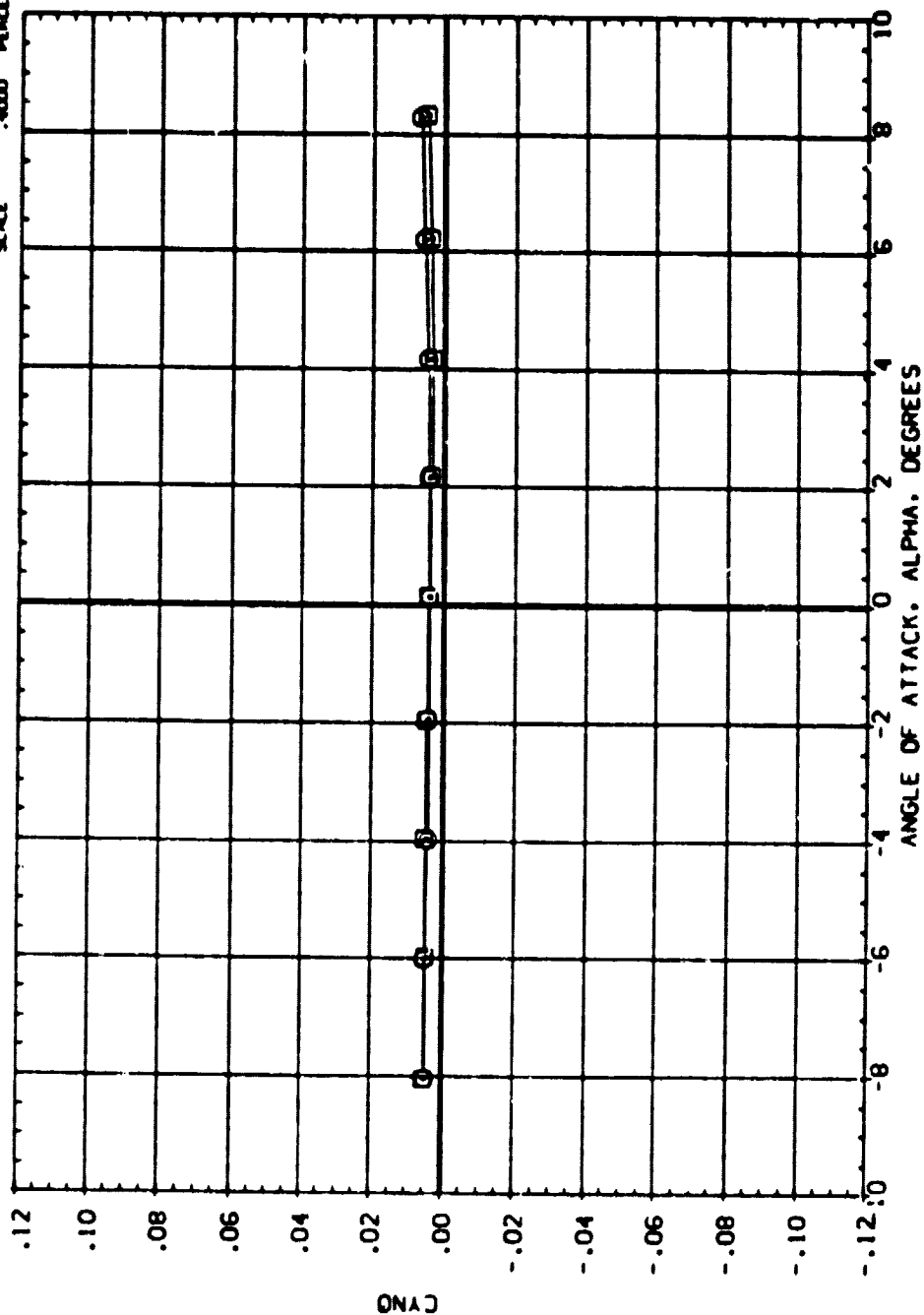


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: **Q** CONFIGURATION DESCRIPTION:
 (F2000) FA20: MSFC TUT 656: CONF 10: ONVZE 2000A11353
 (F2000) FA20: MSFC TUT 656: CONF 10: ONVZE 2000A11353

REFERENCE INFORMATION:
 REF: 8.1800 50. IN
 LIFT: 3.1612 IN.
 WING: 2.7173 IN.
 YAMP: 2.7120 IN.
 ZAMP: 0.0000 IN.
 SCALE: .0000 PERCENT

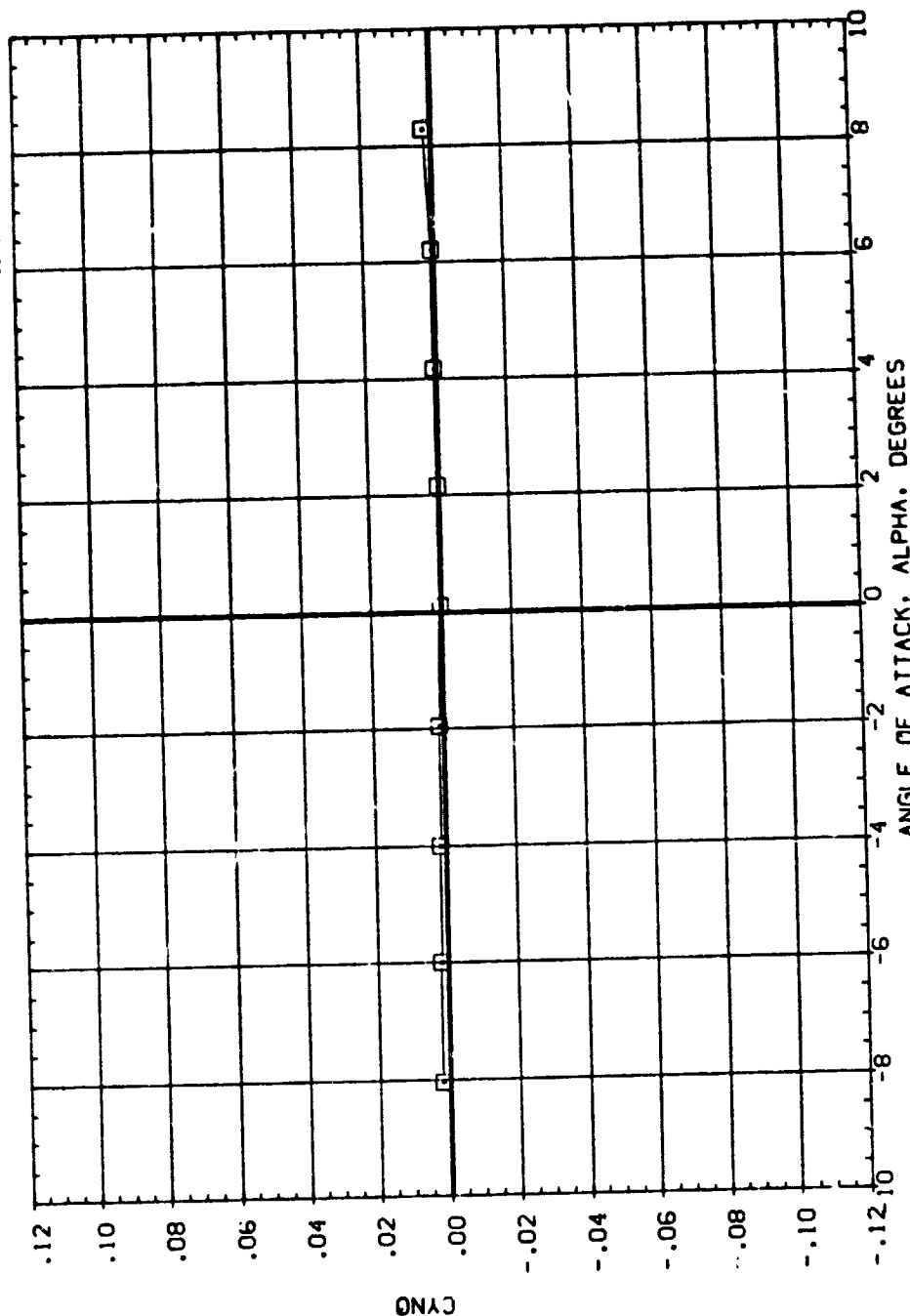


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL: \square CONFIGURATION DESCRIPTION: DATA NOT AVAILABLE
 (FB2805) (FB2608) FA28. MSFC TNT 656. CONF 16. D2VZ2PAPATT353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

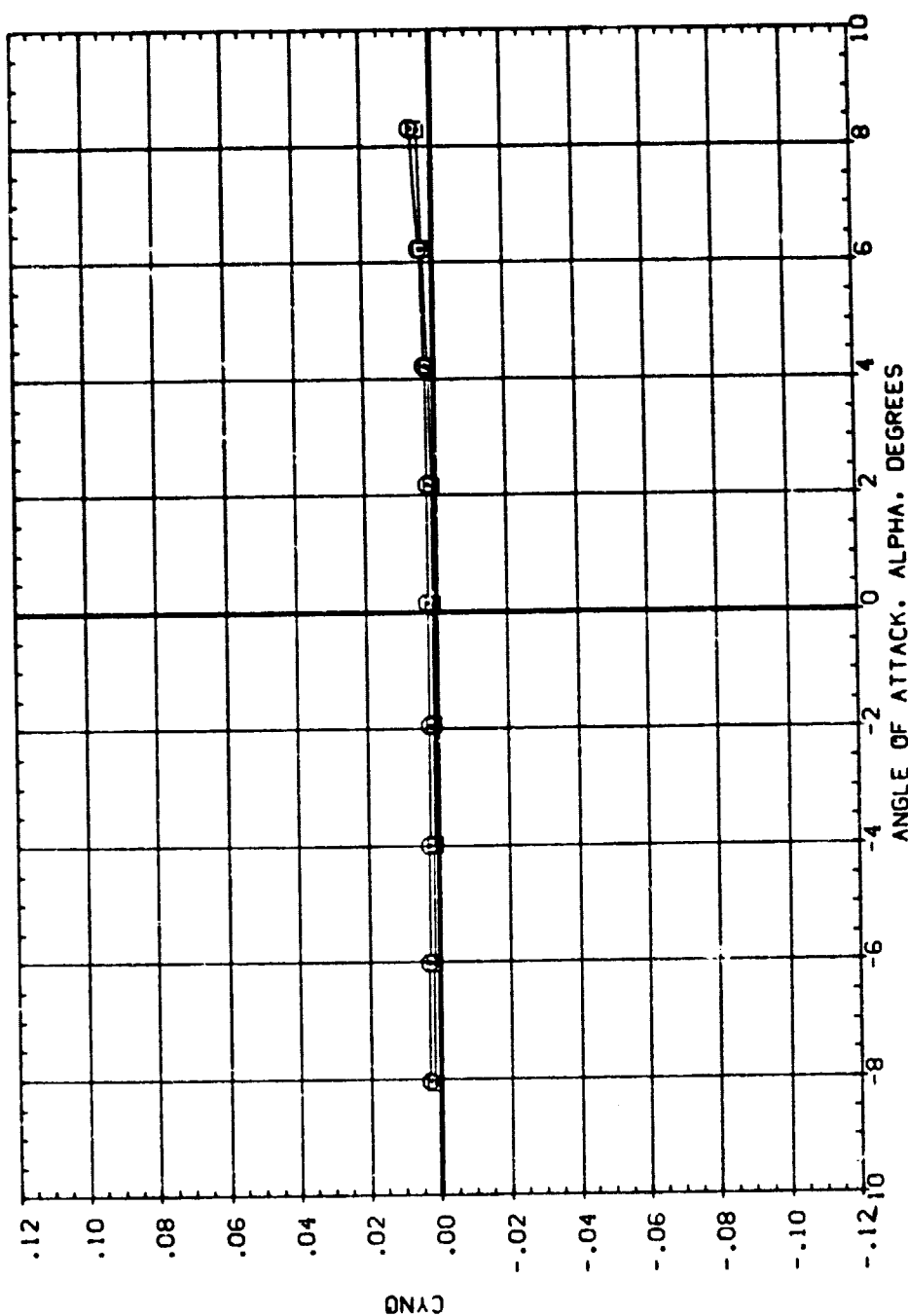


EFFECT OF ET PROTUBERANCES

(C)MACH = .95

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2805) □ FA28. MSFC TWT 856. CONF 10. 02NZE20NPAAT1353
 (FB2808) □ FA28. MSFC TWT 856. CONF 10. 02NZE20NPAAT1353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

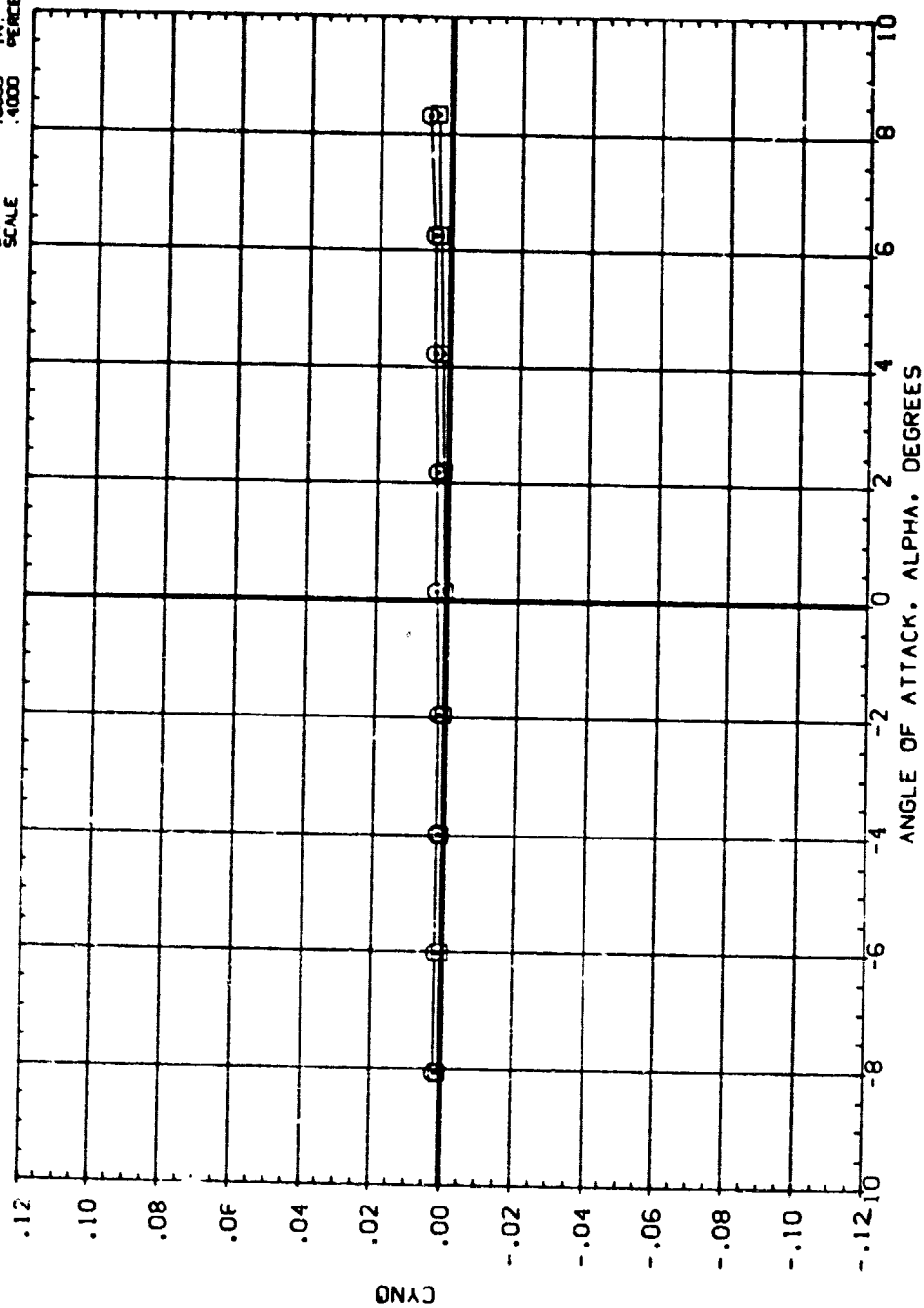


EFFECT OF ET PROTUBERANCES

(0)MACH = 1.05

DATA SET SYMBOL: (FB2805) (FB2808)  CONFIGURATION DESCRIPTION: FA28: MSFC TWT 656: CONFIG: 02V2E2NPAAT1353
FA28: MSFC TWT 656: CONFIG: 02V2E2NPAAT1353

REFERENCE INFORMATION
SREF 6.1580 IN.
LREF 5.1612 IN.
BREF 3.7470 IN.
XREF 2.7120 IN.
YREF .0000 IN.
ZREF .0000 IN.
SCALE .0000 PERCENT

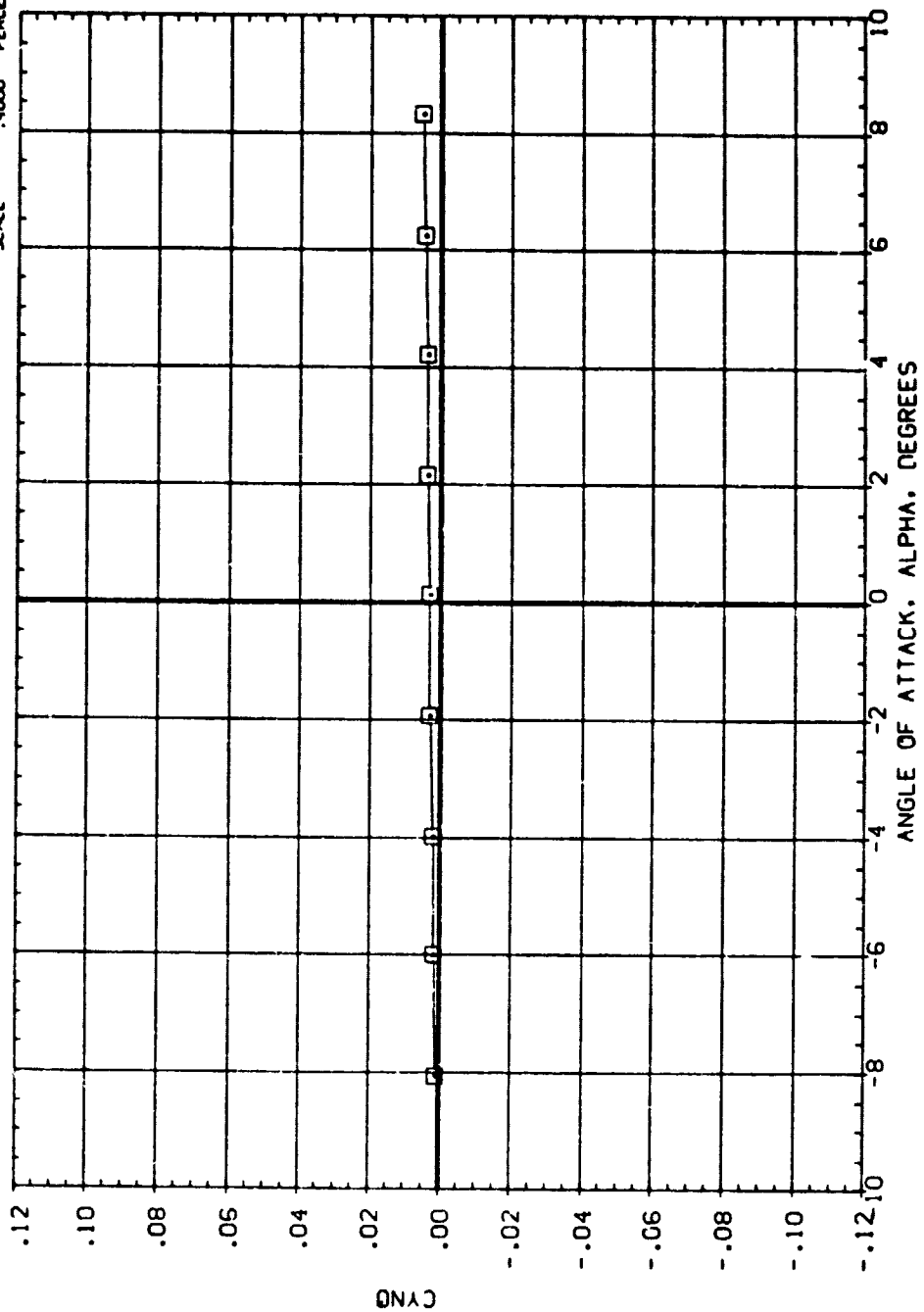


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.11

DATA SET SYMBOL: (FB2805)
 CONFIGURATION DESCRIPTION: DATA NOT AVAILABLE
 (FB2806) PA28, MSFC 1VT 656, CONFIG. 02VZ22PAPAATT353

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YPRP 2.7120 IN.
 ZPRP .0000 IN.
 SCALE .4000 PERCENT



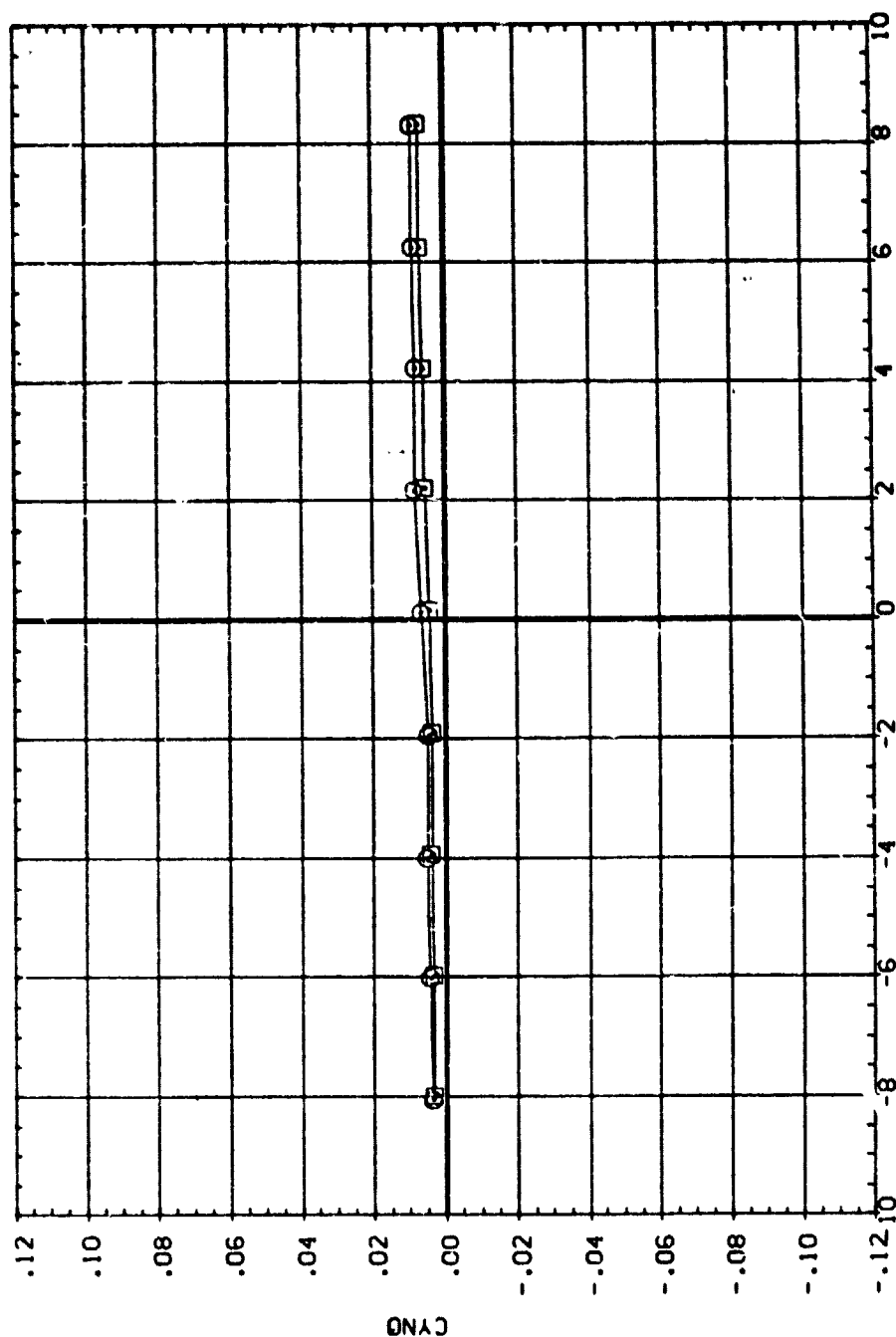
EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15

DATA SET SYMBOL: (FB2805)
 (FB2806)

REFERENCE INFORMATION
 SREF 8.1500 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

CONFIGURATION DESCRIPTION
 FA28. MSFC TVT 656. CONF 1G. QZVZL20NPAATT353
 FA28. MSFC TVT 656. CONF 1G. QZVZL20NPAATT353



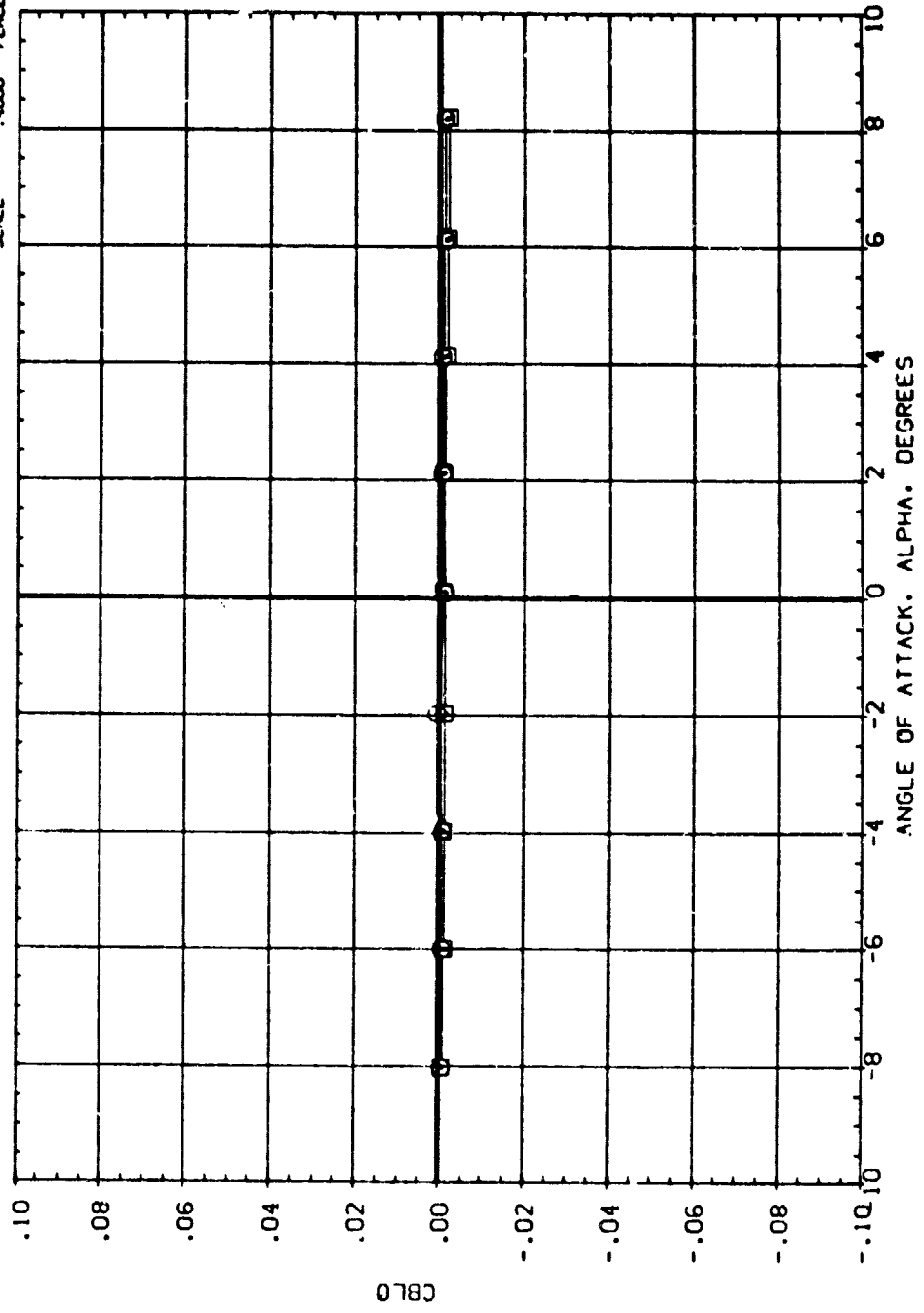
ANGLE OF ATTACK, ALPHA, DEGREES

EFFECT OF ET PROTUBERANCES

(G)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2805) □ FA28. MSFC TVT 656. CONF IG. 02NZE2MNAATT353
 (FB2808) □ FA28. MSFC TVT 656. CONF IG. 02NZE2MNAATT353

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XPRP 2.7120 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .4000 PERCENT

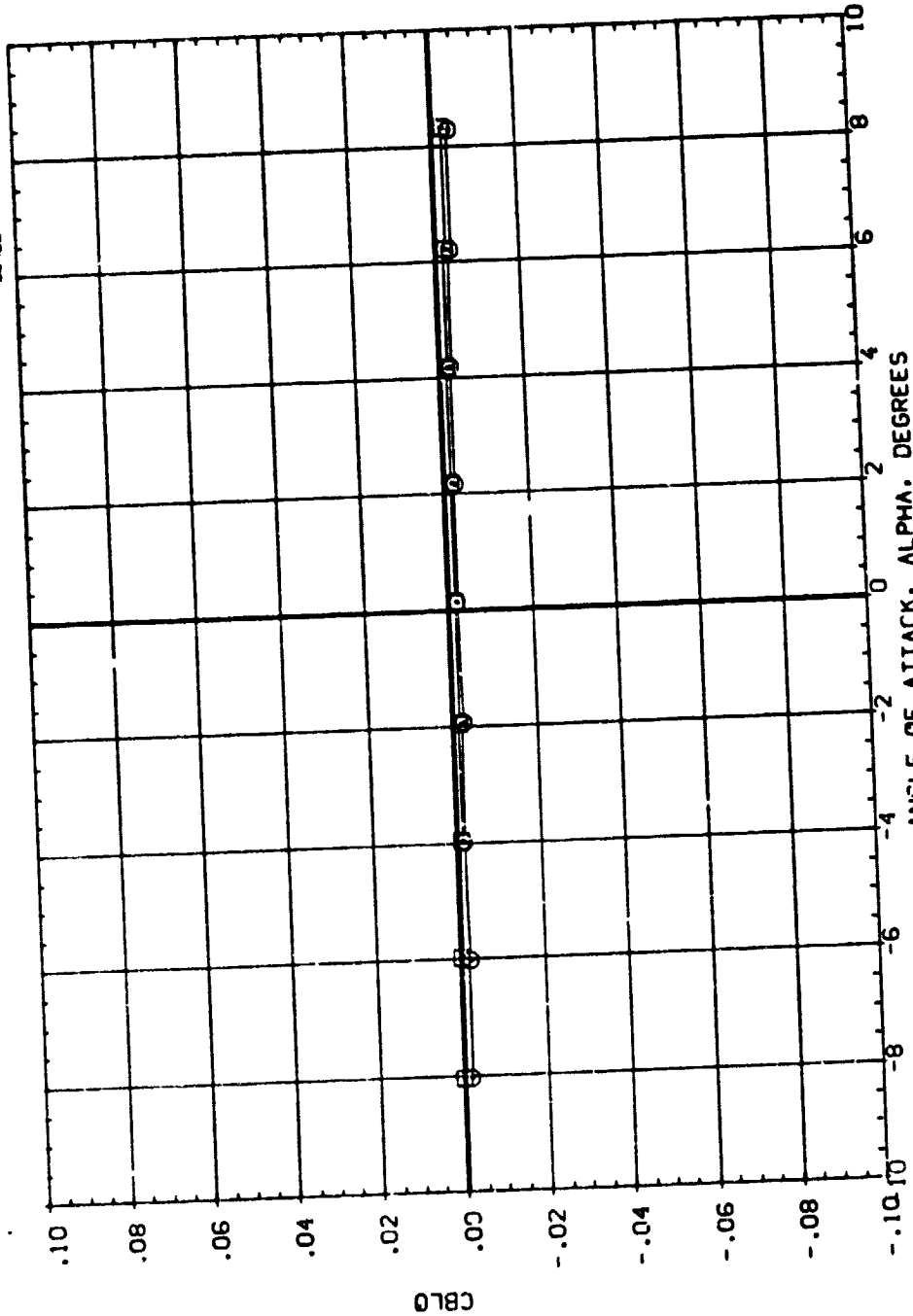


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: B
 (FB2805) FA28, MSFC TWT 656, CONF IG: 02NZE22WAA11353
 (FB2808) FA28, MSFC TWT 656, CONF IG: 02NZE22WAA11353

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

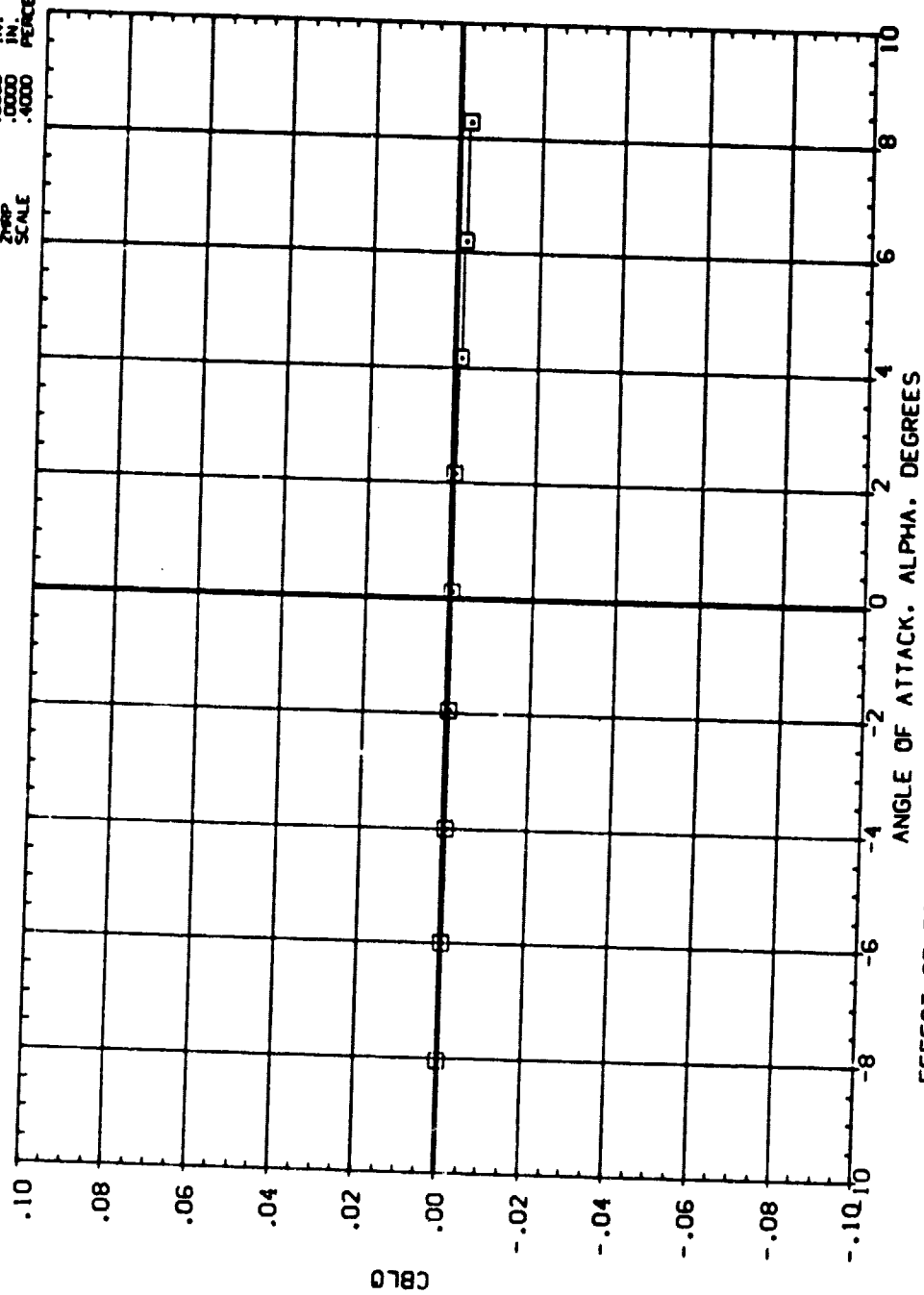


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL: FB2805
 CONFIGURATION DESCRIPTION: DATA NOT AVAILABLE
 FB2808: FA28, MSC 161 656, CONF 16, 02VZ22NPAA11353

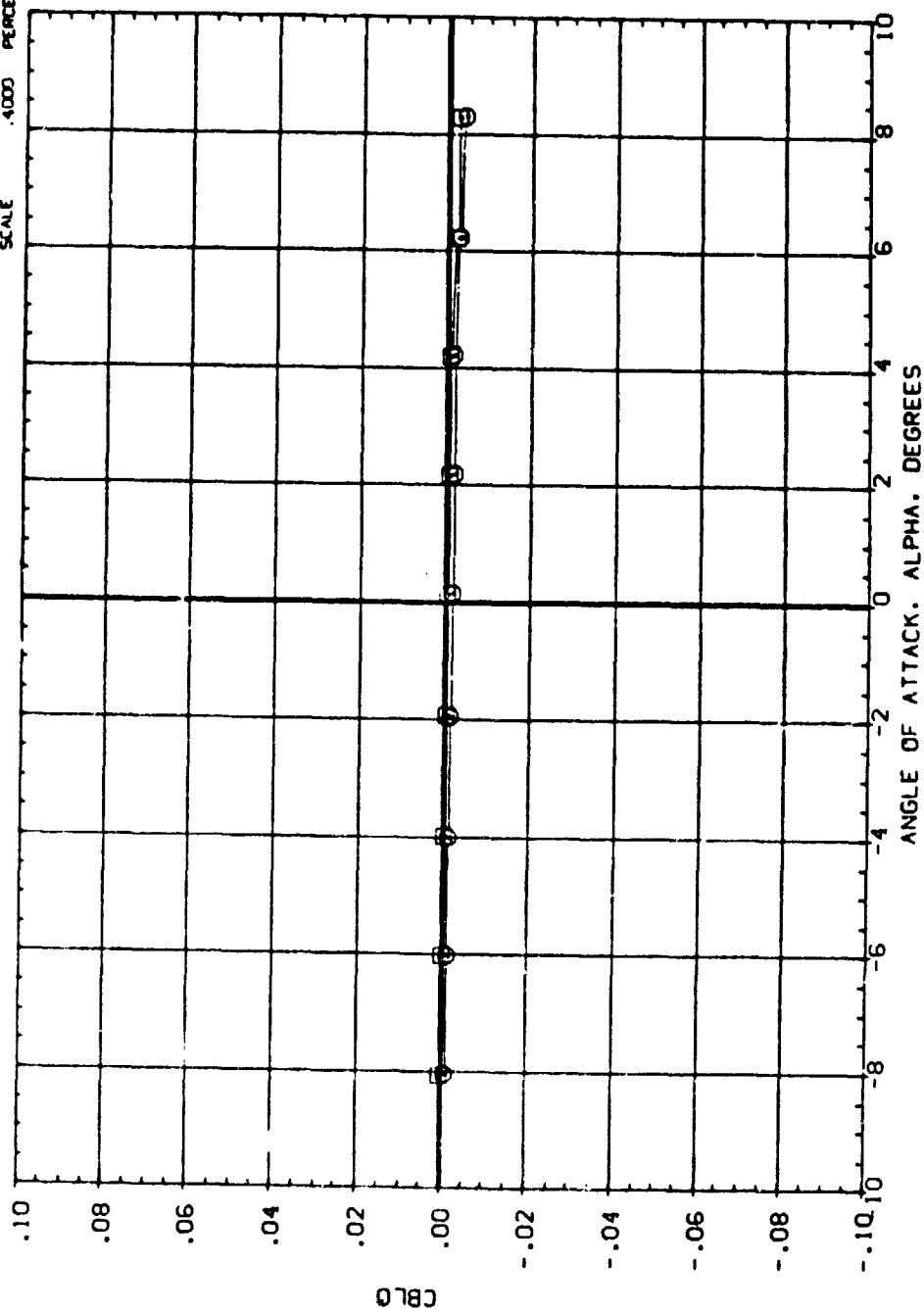
REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF ET PROTUBERANCES
 (C)MACH = .95

DATA SET SYMBOL: B
 (FB2805) (FB2808)
 CONFIGURATION DESCRIPTION:
 FA28: MS/C 1WT 656; CONF IG: 002E2PNAATT353
 FA28: MS/C 1WT 656; CONF IG: 002E2PNAATT353

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 10. IN
 BREF 3.7470 10. IN
 XREF 2.7120 10. IN
 YREF .0000 10. IN
 ZREF .0000 10. IN
 SCALE .4000 PERCENT

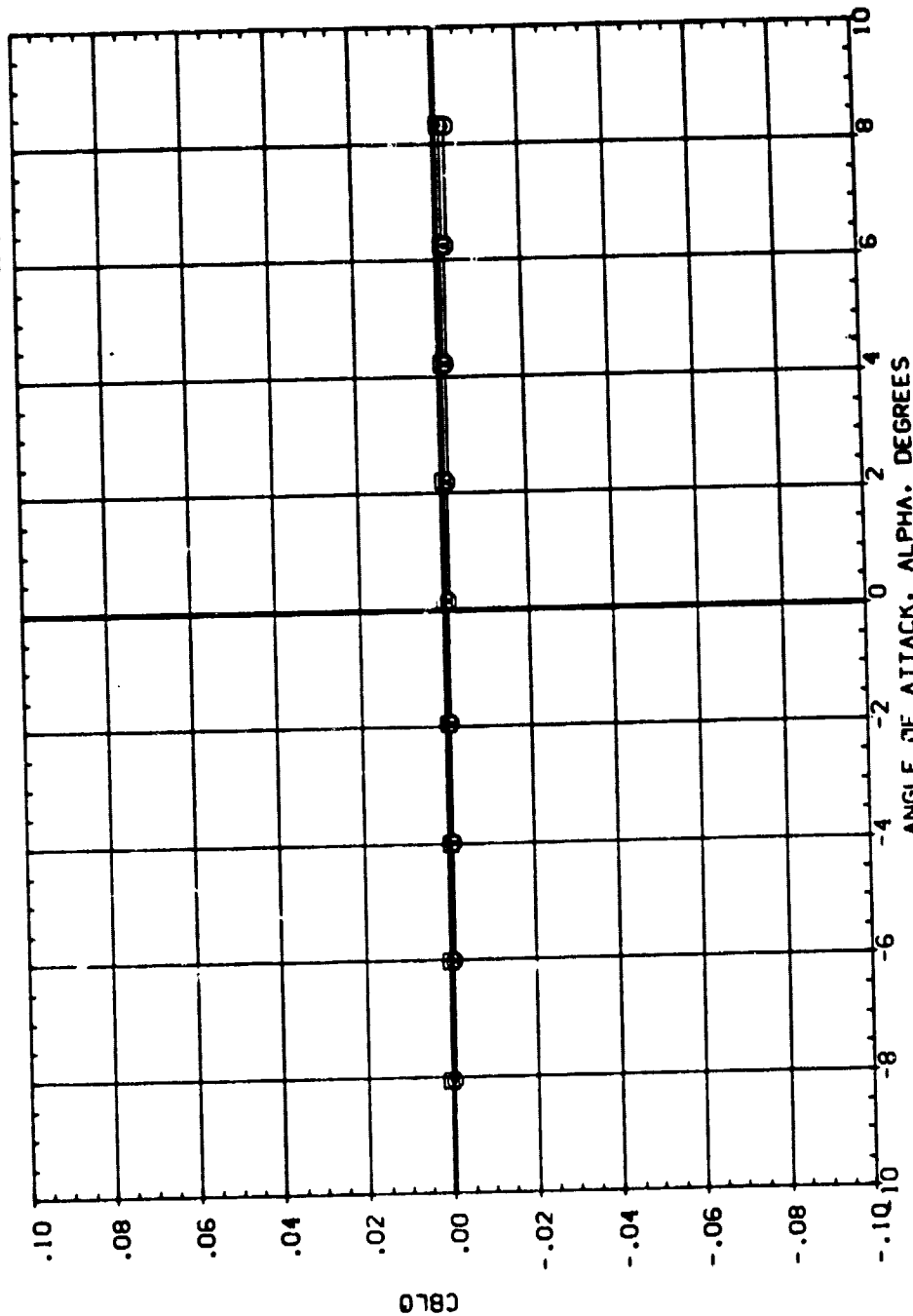


EFFECT OF ET PROTUBERANCES

(0)MACH = 1.05

DATA SET SYMBOL: B
 (FB805) FA20. MSC TVT 656. CONF IG. 02VZ20VAA11253
 (FB808) FA20. MSC TVT 656. CONF IG. 02VZ20VAA11353

REFERENCE INFORMATION
 SREF 6.1960 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 FEET

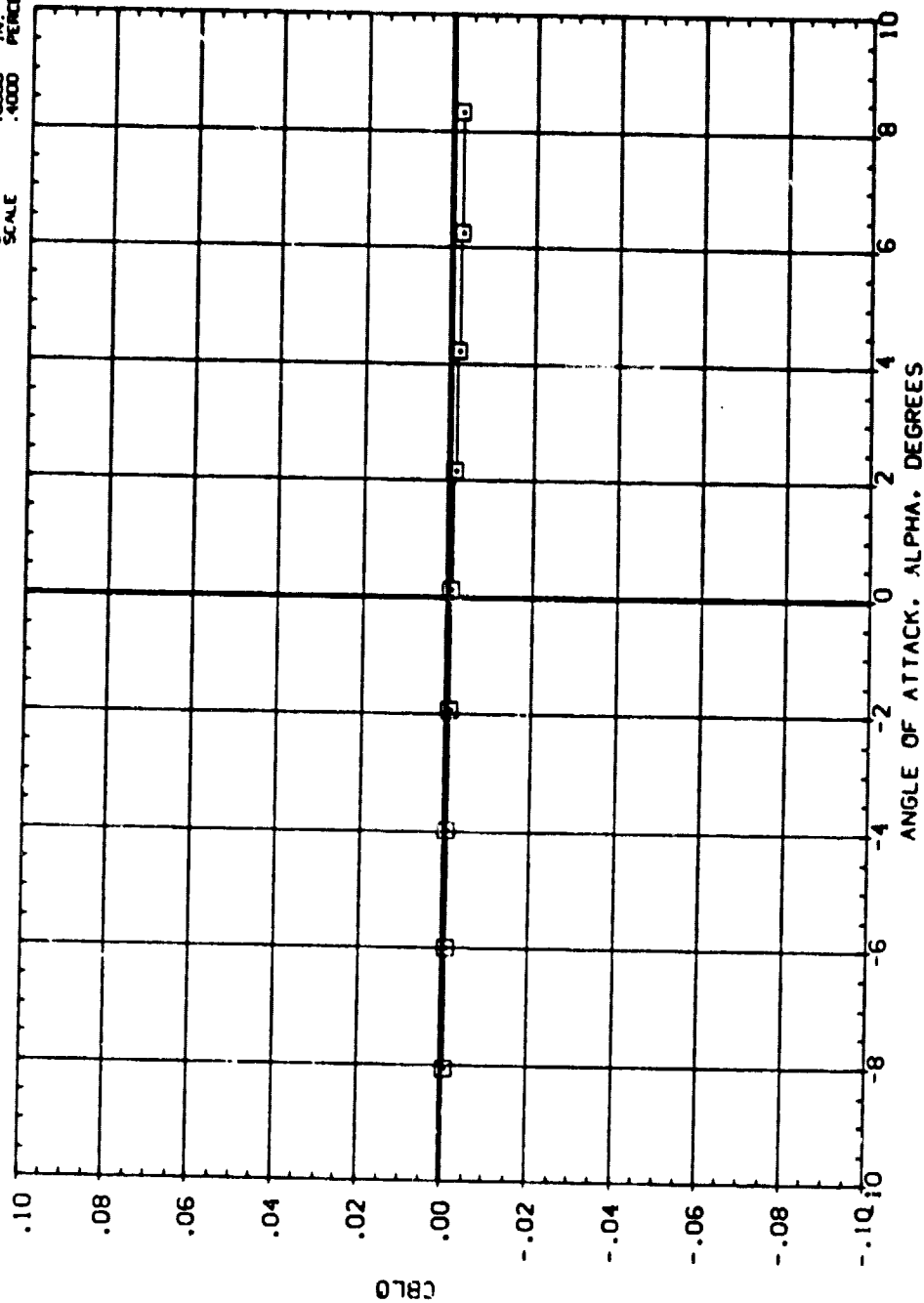


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.11

DATA SET SYMBOL: (FB2805) (FB2808) ☐ DATA NOT AVAILABLE
 F/28, MSFC TWT 656, CONF IG. 0202E, 20NPA11353

REFERENCE INFORMATION
 SREF 6.1580 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 XREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

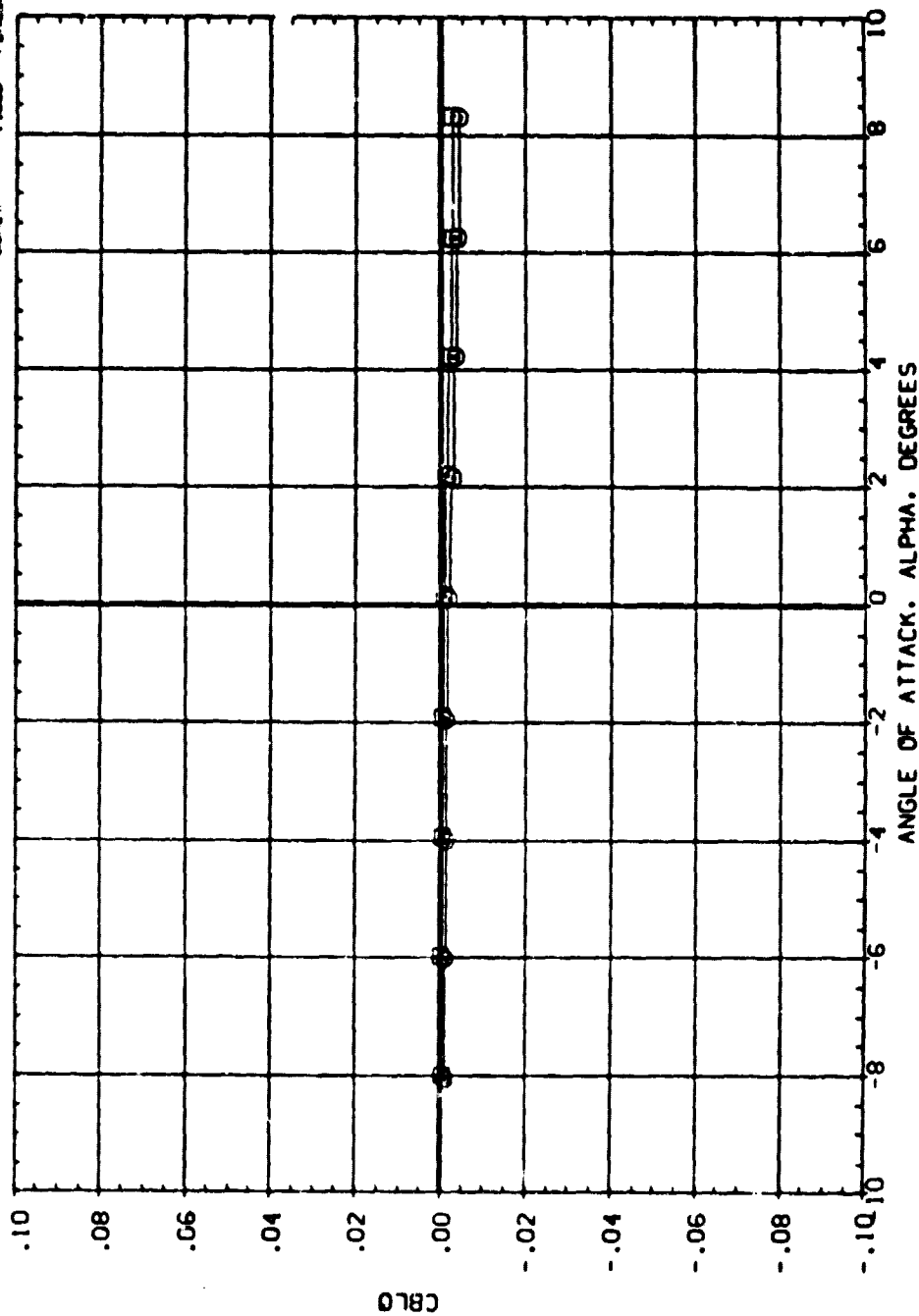


EFFECT OF ET PROTUBERANCES

(F)MACH = 1.15

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2805) □ FAZ. MSFC TUT 656. CONFIG. 02VZ2MVAAT1253
 (FB2808) □ FAZ6. MSFC TUT 656. CONFIG. 02VZ2MVAAT1253

REFERENCE INFORMATION
 SREF 6.1560 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 ZREF .0000 IN.
 SCAL .0000 PERCENT

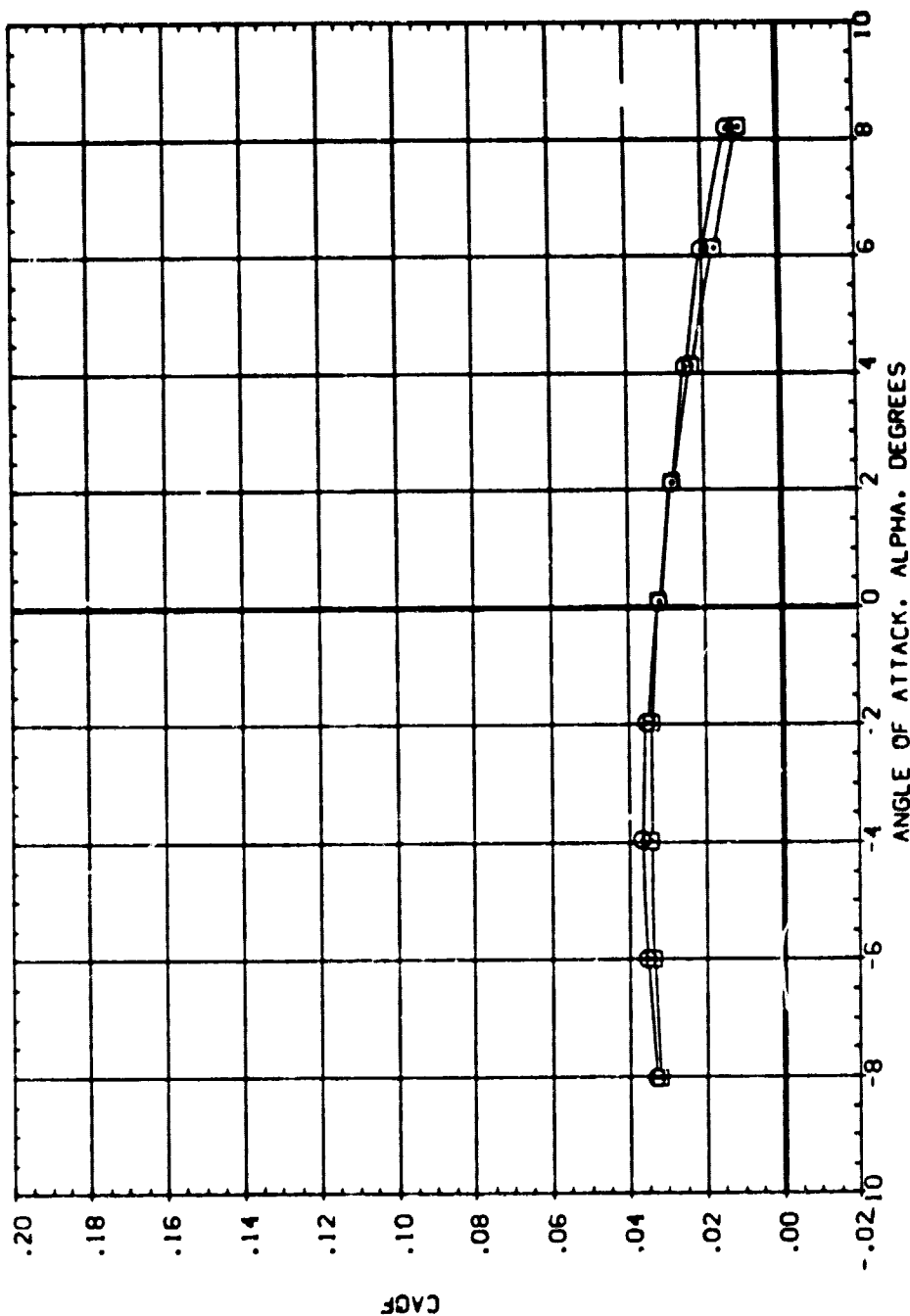


EFFECT OF ET PROTUBERANCES

(G)MACH = 1.25

DATA SET SYMBOL: (FB2605) □ (FB2608) □
 CONFIGURATION DESCRIPTION: FA28. MSFC TVT 656. CONF 10. QZVZ 20MAAT1353
 FA28. MSFC TVT 656. CONF 10. QZVZ 20MAAT1353

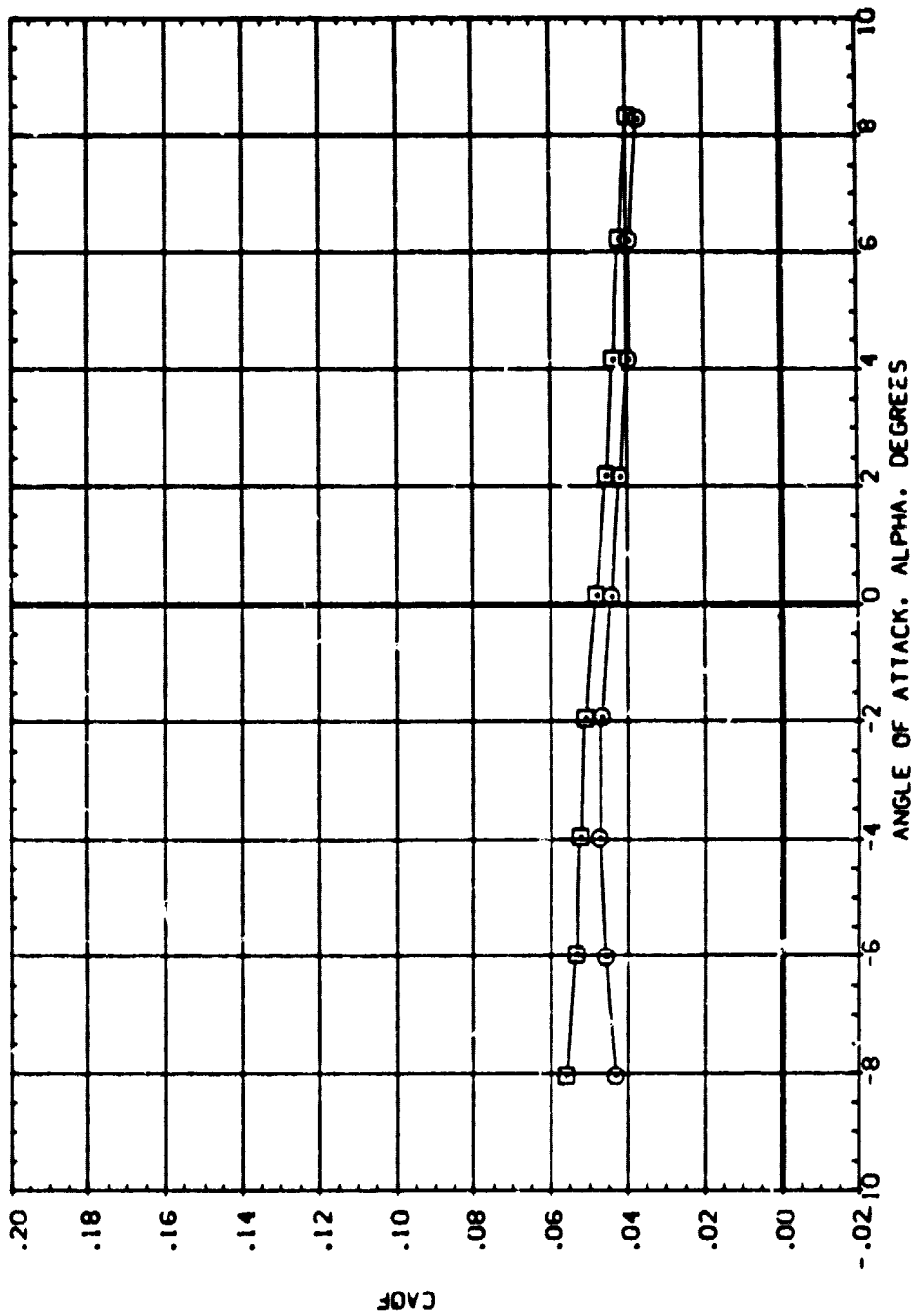
REFERENCE INFORMATION
 SREF 6.1880 SQ. IN.
 LREF 3.1612 IN.
 BREF 2.7170 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



EFFECT OF ET PROTUBERANCES

(A) MACH = .60

SCALE	REFUGEE INFORMATION	IN	REFUGEE
100	100	100	100
90	90	90	90
80	80	80	80
70	70	70	70
60	60	60	60
50	50	50	50
40	40	40	40
30	30	30	30
20	20	20	20
10	10	10	10
0	0	0	0

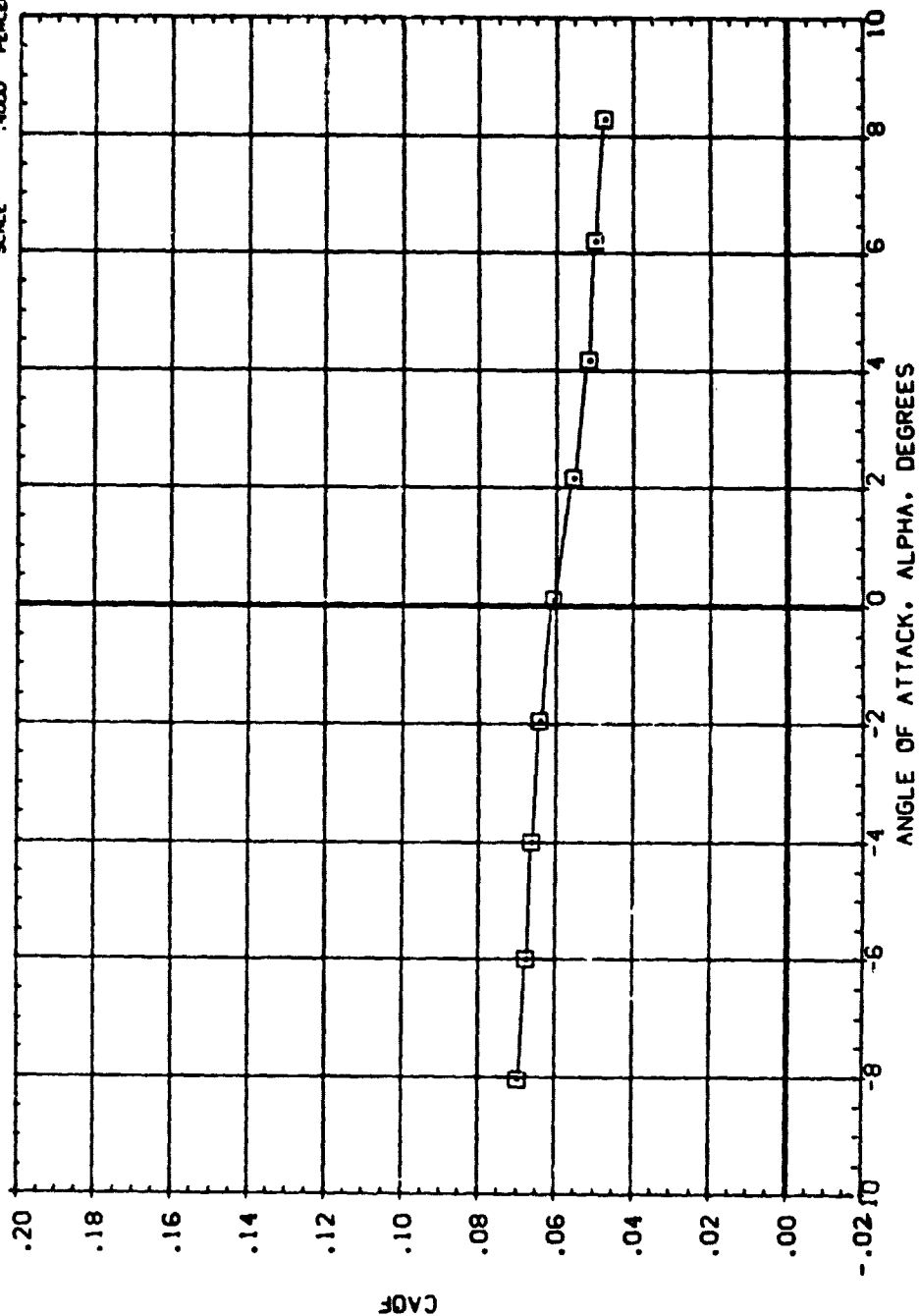


EFFECT OF ET PROTUBERANCES

$$(B)_{MACH} = .9C$$

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(F52805)	DATA NOT AVAILABLE
(F52808)	FA28, MSFC TWT 656, CONF IG. 02N2E2PAPAA17353

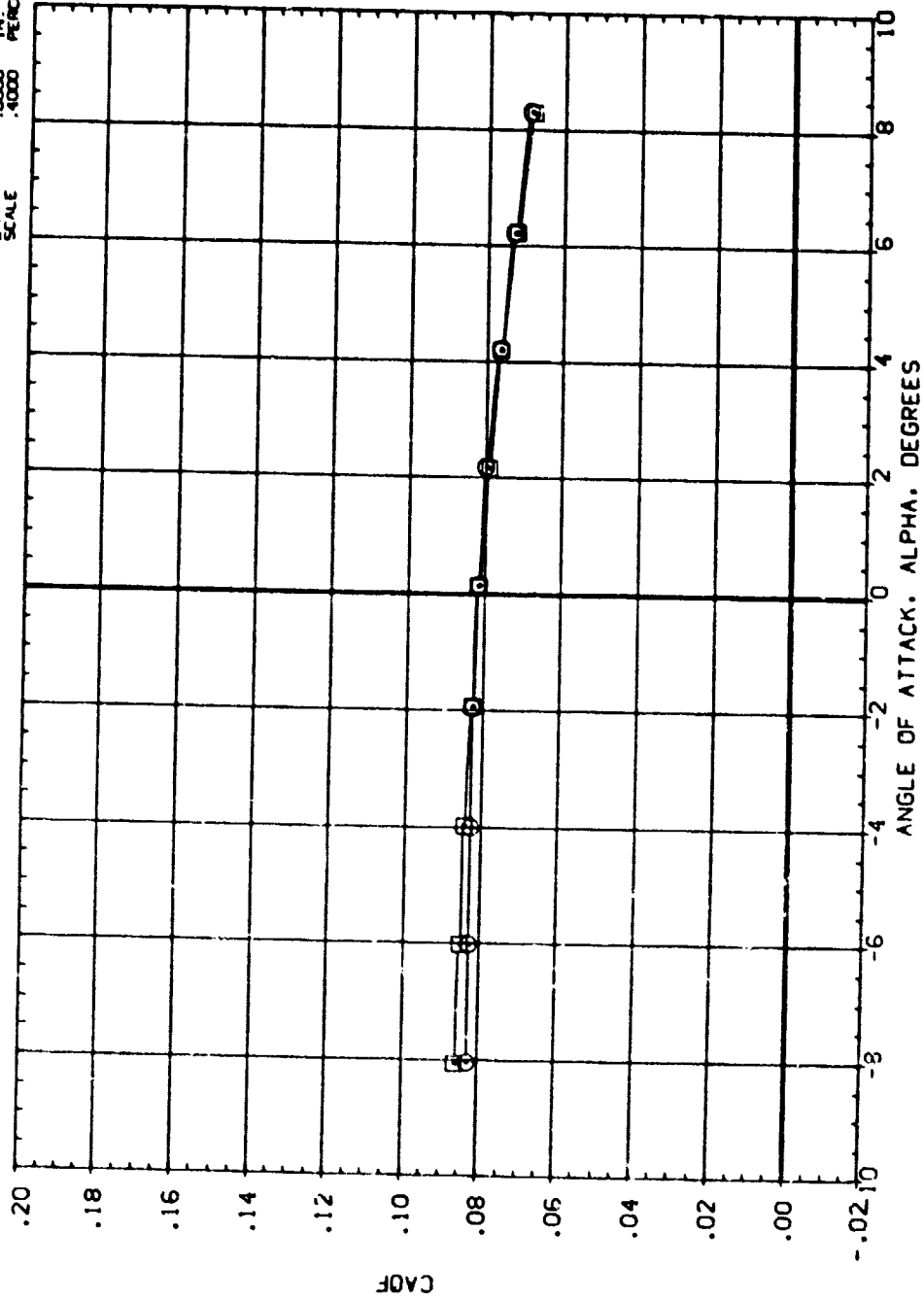
REFERENCE INFORMATION	
SREF	6.1980 SD. IN
LREF	5.1612 IN.
REF	3.7470 IN.
XPDP	2.7120 IN.
YDP	.0000 IN.
SCALE	.4000 PERCH



(C)MACH = .95
EFFECT

DATA SET SYMBOL: FB2805
 CONFIGURATION DESCRIPTION: FB2805
 FB2805: MSEC TUT 656: CONF IG: 02022000AATT253
 FB2805: MSEC TUT 656: CONF IG: 02022000AATT253

REFERENCE INFORMATION
 SREF 5.1980 IN.
 LREF 5.1512 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

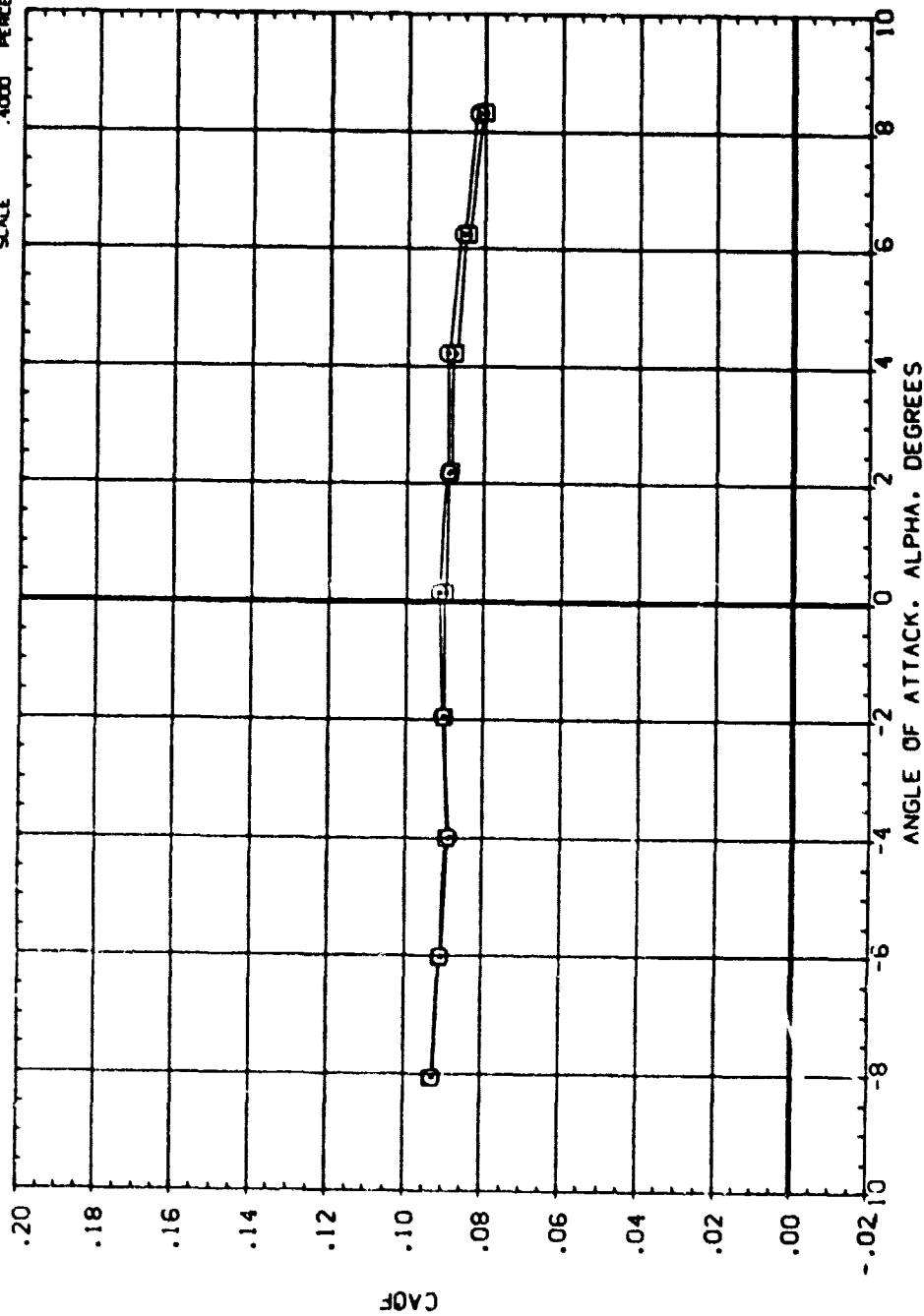


EFFECT OF ET PROTUBERANCES

(D)MACH = 1.05

DATA SET SYMBOL: (FB2805) (FB2808) ☐ FA28. MSFC TWT 656. CONF 1G. 02NZE 20MAATT353
 FA28. MSFC TWT 656. CONF 1G. 02NZE 20MAATT353

REFERENCE INFLUENCE ON
 SIZE 6.1580 IN.
 LINE 3.1612 IN.
 BREF 3.1470 IN.
 WARP 2.7120 IN.
 ZWAP .0000 IN.
 SCALE .4000 PERCENT

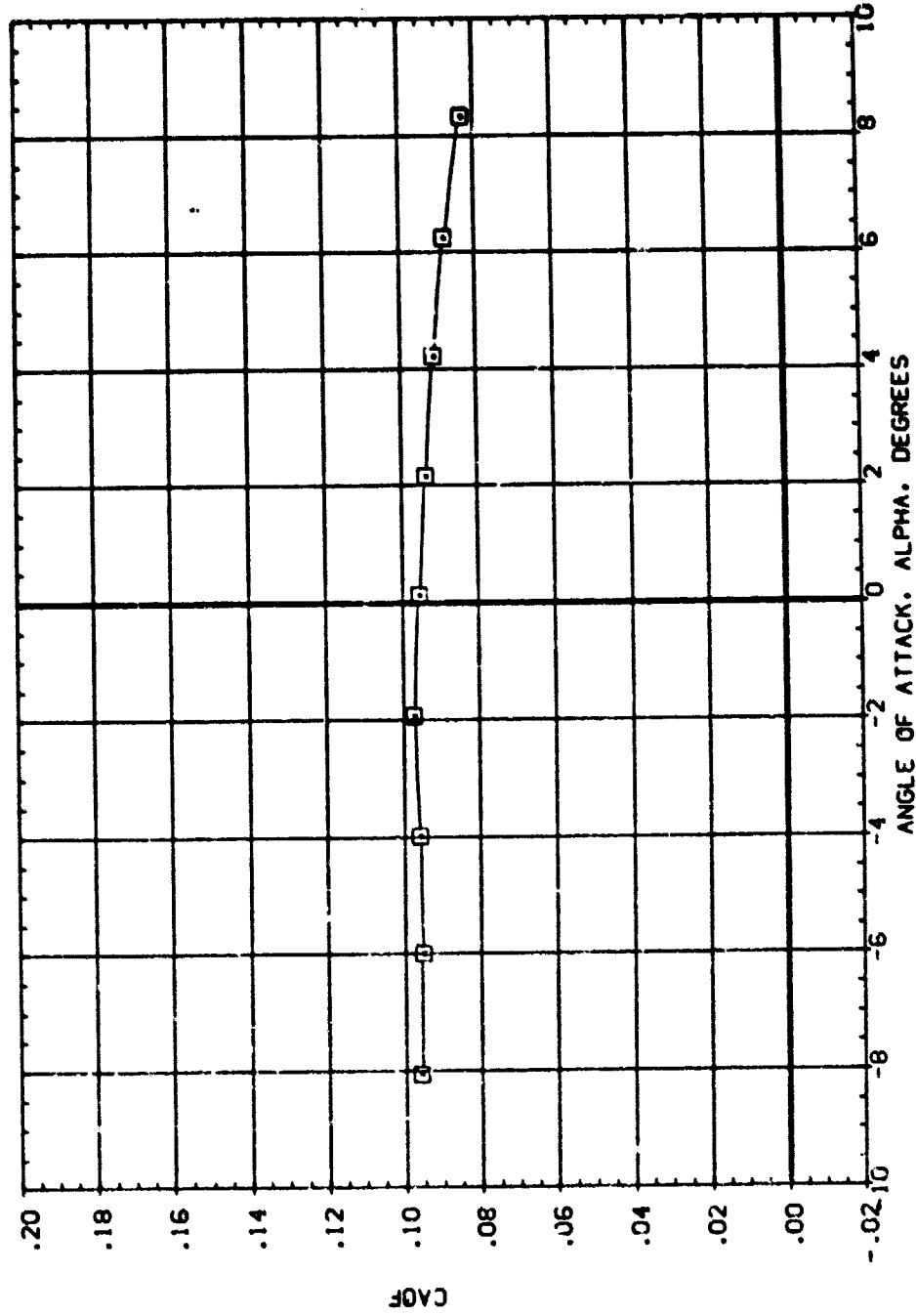


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.11

DATA SET SYMBOL: 8
 (FB805) DATA NOT AVAILABLE
 (FB808) FA20, MSC TWT 655, CONFIG. 002220PAA11353

REFERENCE INFORMATION
 SREF 6.1880 IN.
 LREF 5.1612 IN.
 MREF 3.7470 IN.
 PREF 2.7120 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

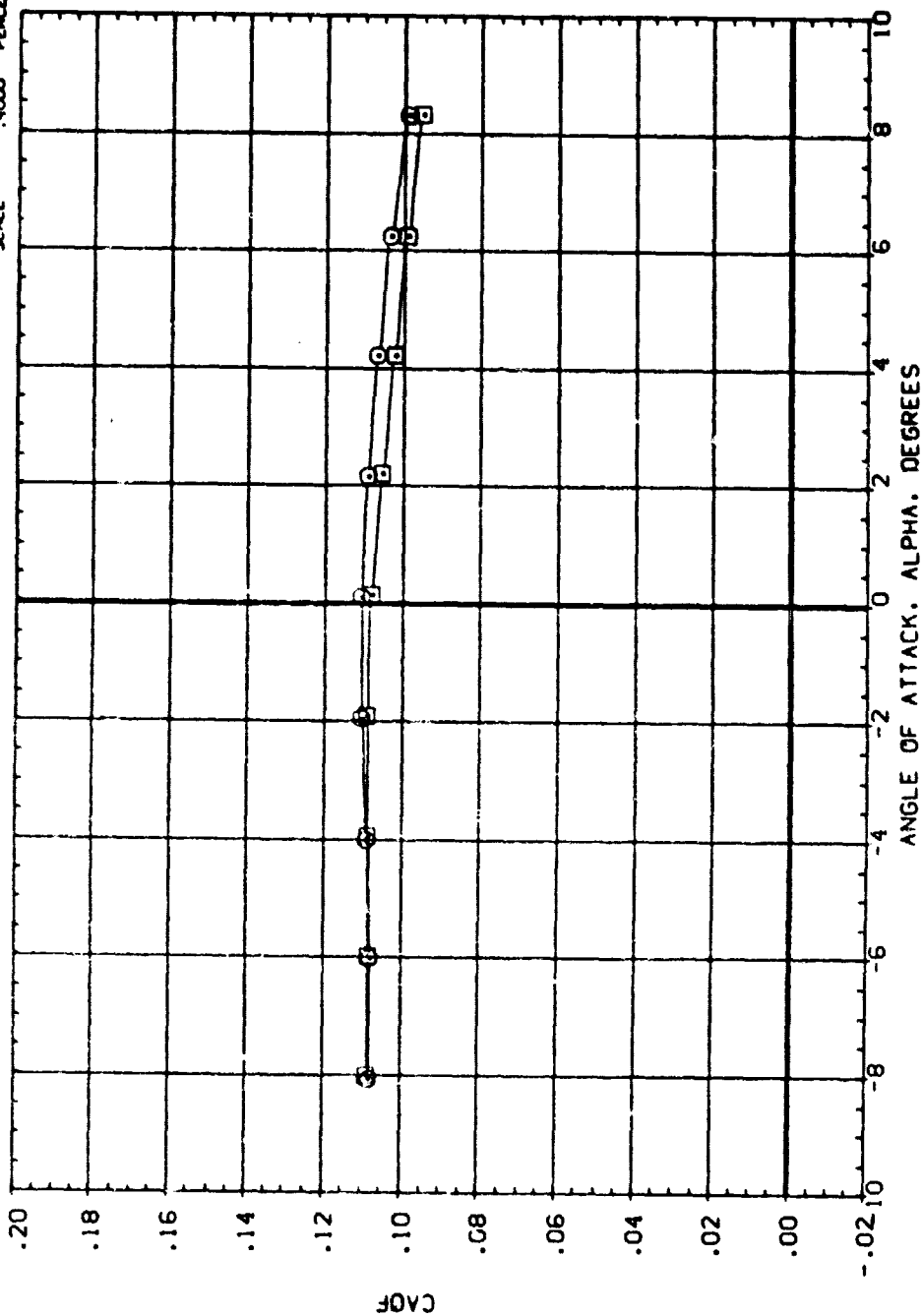


EFFECT OF ET PROTUBERANCES

(FJ MACH = 1.15)

DATA SET SYMBOL: (FB2805) \square (FB2808) \square CONFIGURATION DESCRIPTION: FA20, MSFC TVI 356, CONF IG. 02N2E20NPA11763 FA20, MSFC TVI 656, CONF IG. 02N2E20NPA11753

REFERENCE INFORMATION
 SREF 6.1980 50. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 WREF .0000 IN.
 SCALE .4000 PERCENT

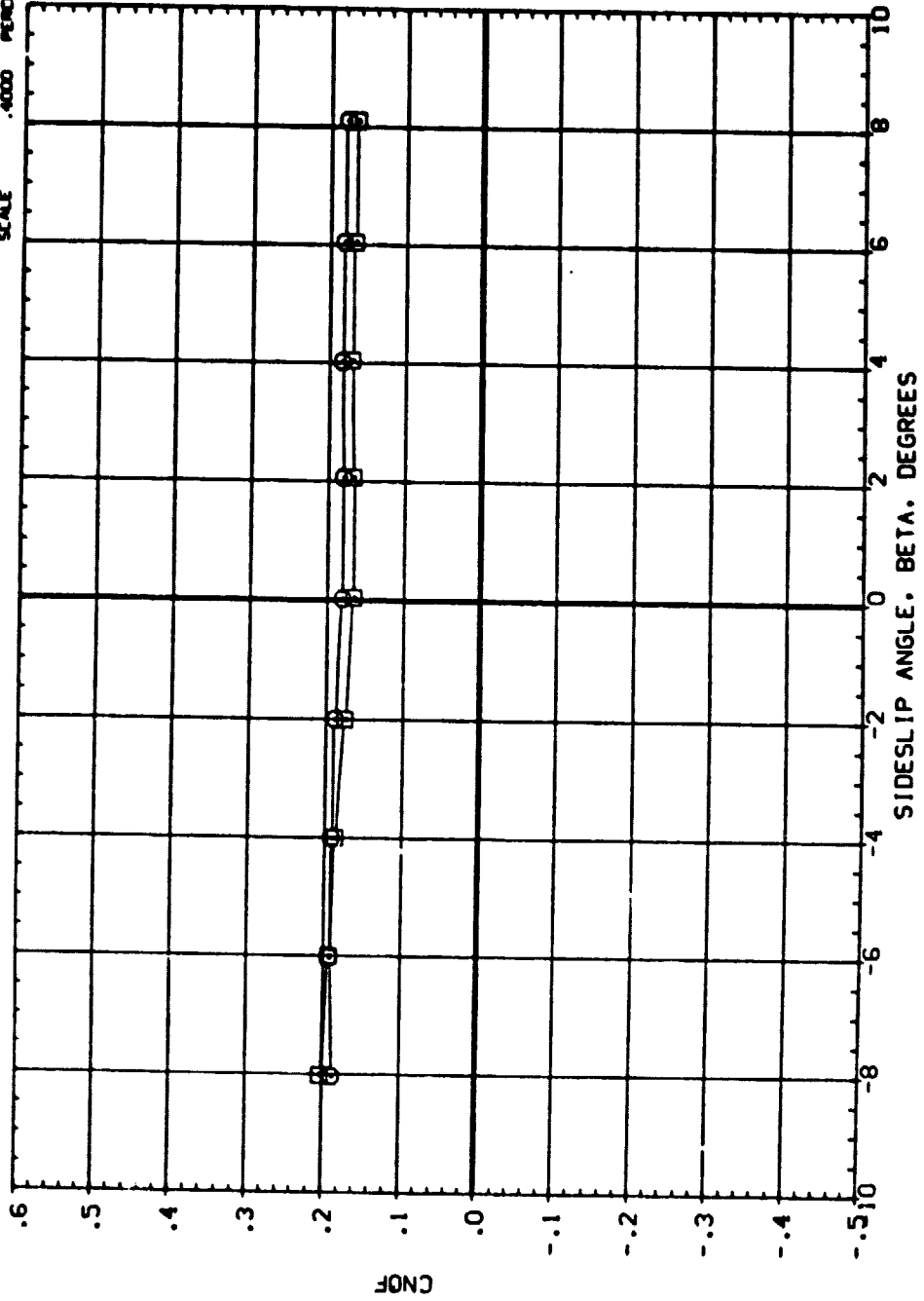


EFFECT OF ET PROTUBERANCES

(G)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2005) 8 FA28. MSC TWT 656. CONFIG. 00VEZMNAATT253
 (FB2005) 8 FA28. MSC TWT 656. CONFIG. 00VEZMNAATT253

REFERENCE INFORMATION
 SREF 8.1800 SQ. IN.
 LREF 2.1612 IN.
 BREF 2.7478 IN.
 WREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

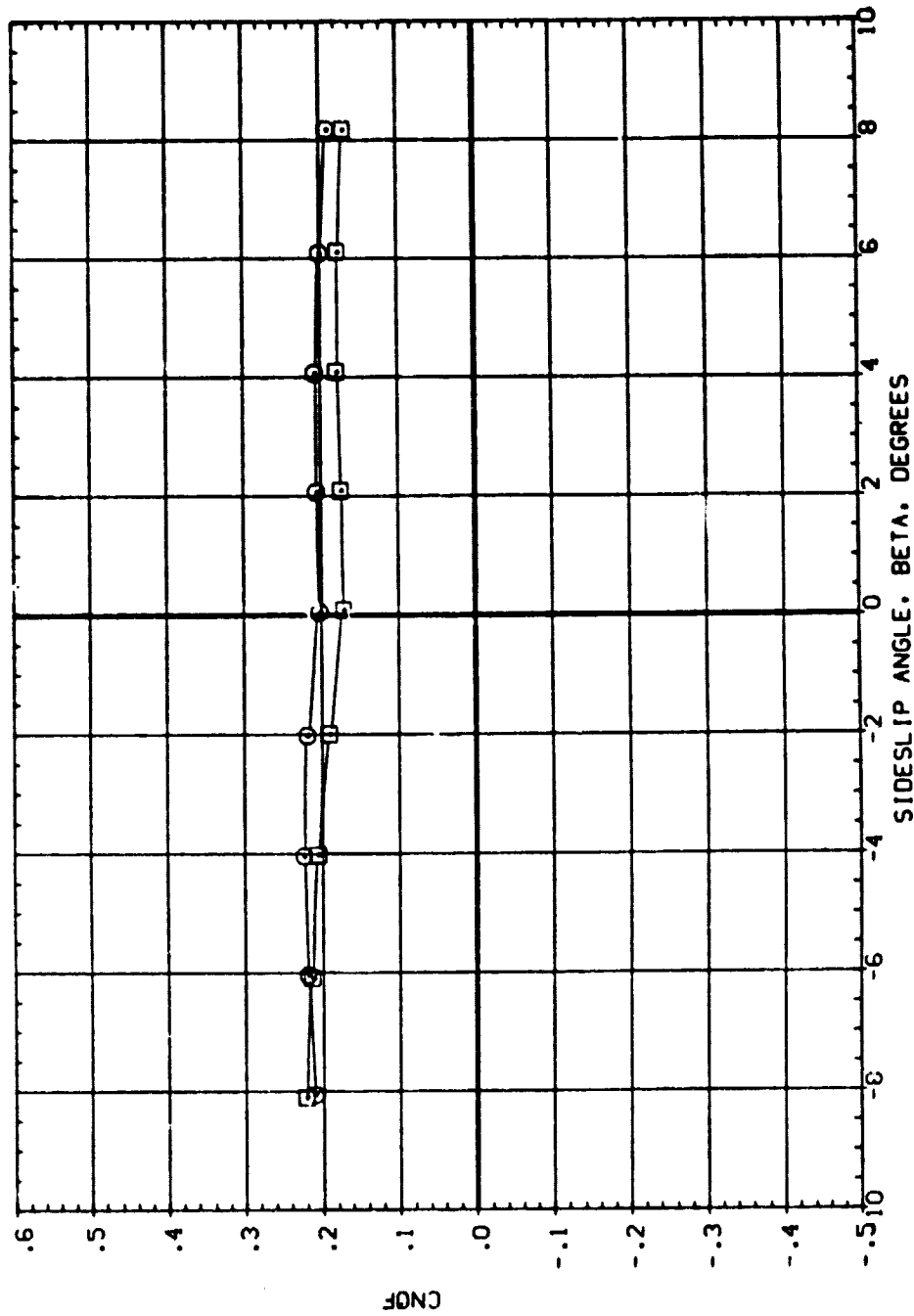


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2806) □ FA28. MSFC TVT 656. CONF IG. 02NZE2NPAATT353
 (FB2809) □ FA28. MSFC TVT 656. CONF IG. 02NZE2NPAATT353

REFERENCE INFORMATION
 SREF 6.1900 50. IN
 LREF 3.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

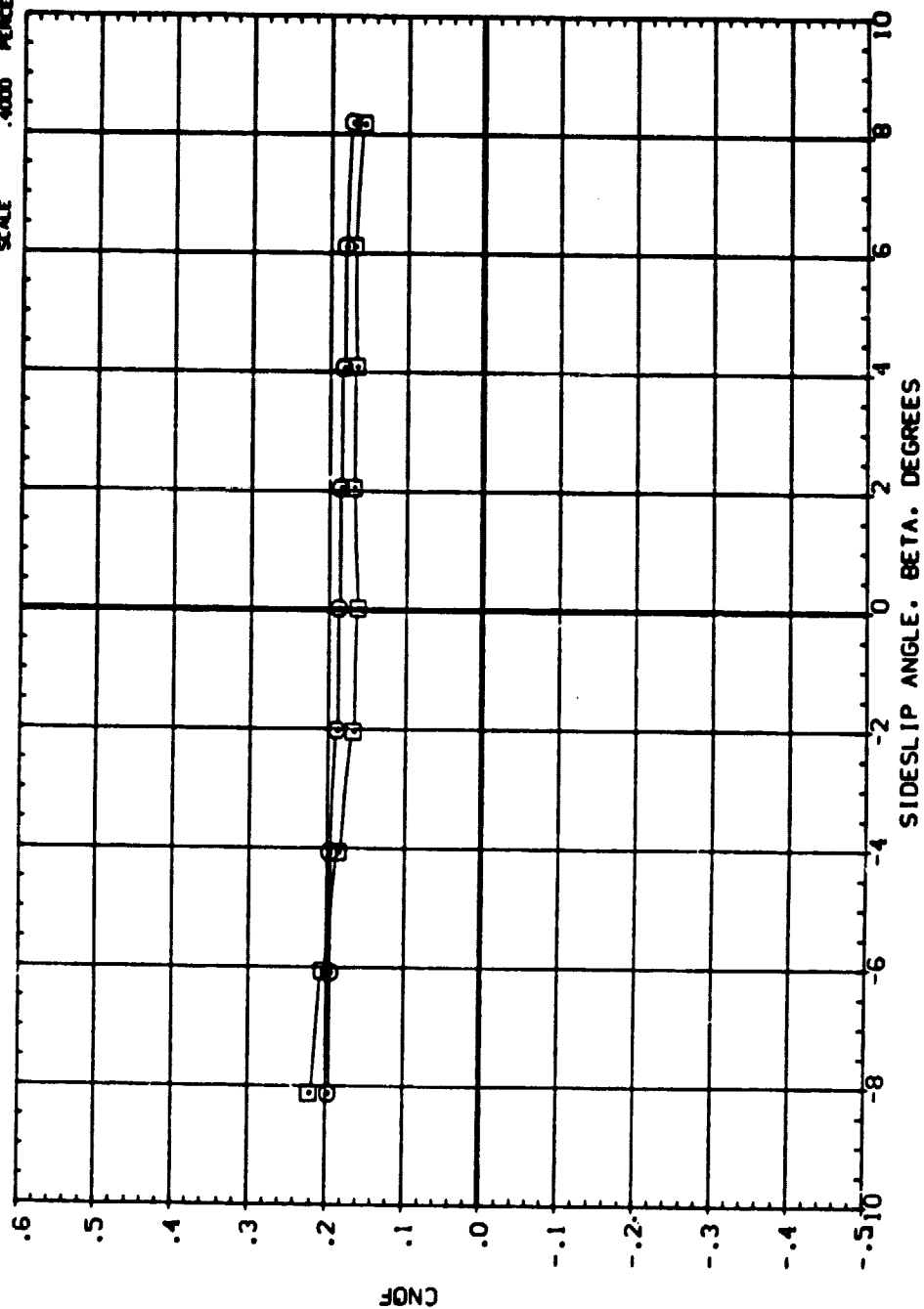


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2805) □ FA28. H5FC TVT 656. CONF IG. 02N2E20NPA11.53
 (FB2809) □ FA28. H5FC TVT 656. CONF IG. 02N2E20NPA11.53

REFERENCE INFORMATION
 SREF 8.1800 90. IN.
 LREF 3.1912 IN.
 BREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

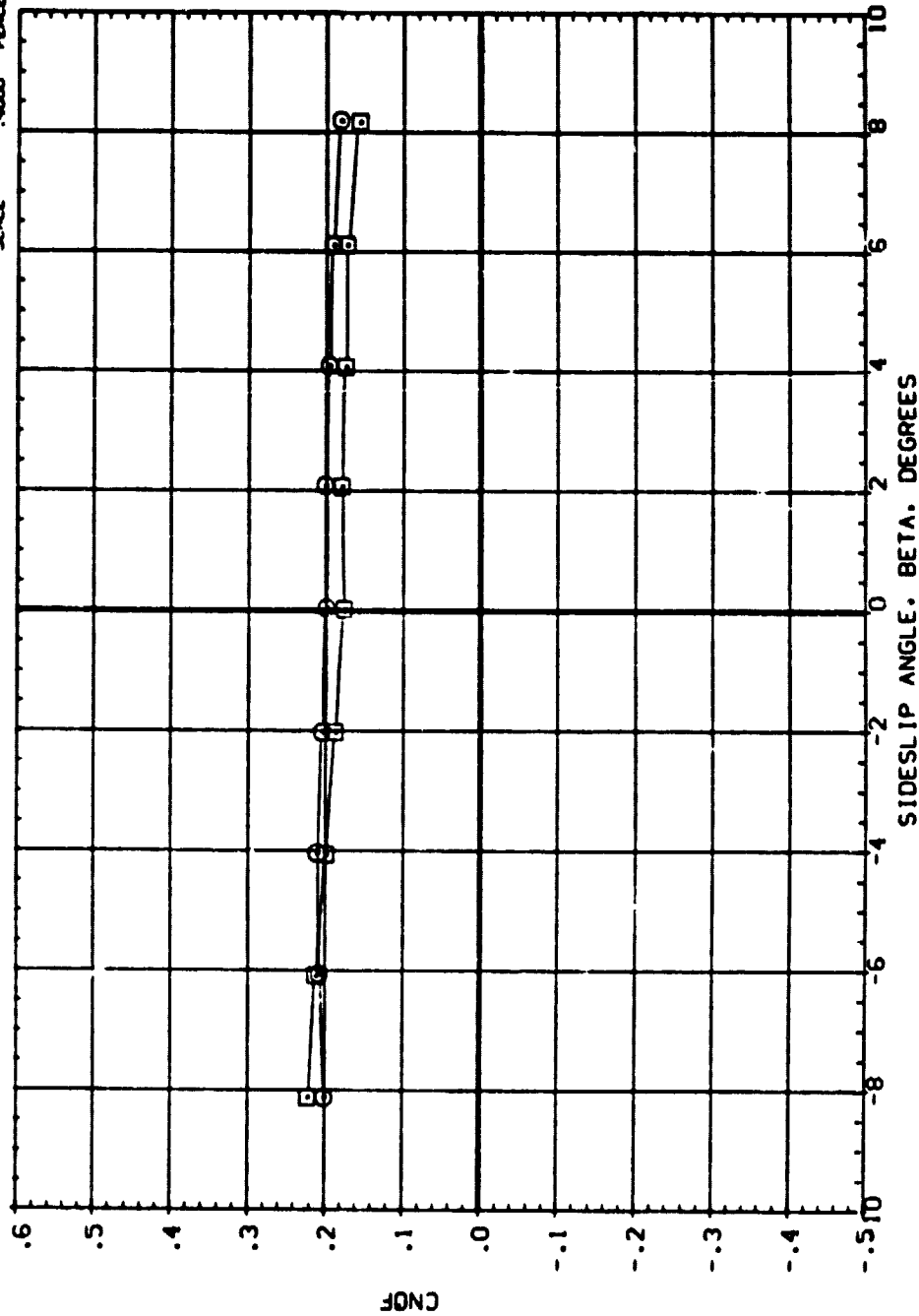


EFFECT OF ET PROTUBERANCES

(C)MACH = 1.05

DATA SET SYMBOL: (FB2003) \square CONFIGURATION DESCRIPTION: FA2B, MSFC INT 656, CONF IG: CONVEZAMPATT1353
 (FB2003) FA2B, MSFC INT 656, CONF IG: CONVEZAMPATT1353

REFERENCE INFORMATION
 SREF: 6.1580 IN.
 LREF: 5.1612 IN.
 WREF: 3.7470 IN.
 YREF: 2.7120 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT

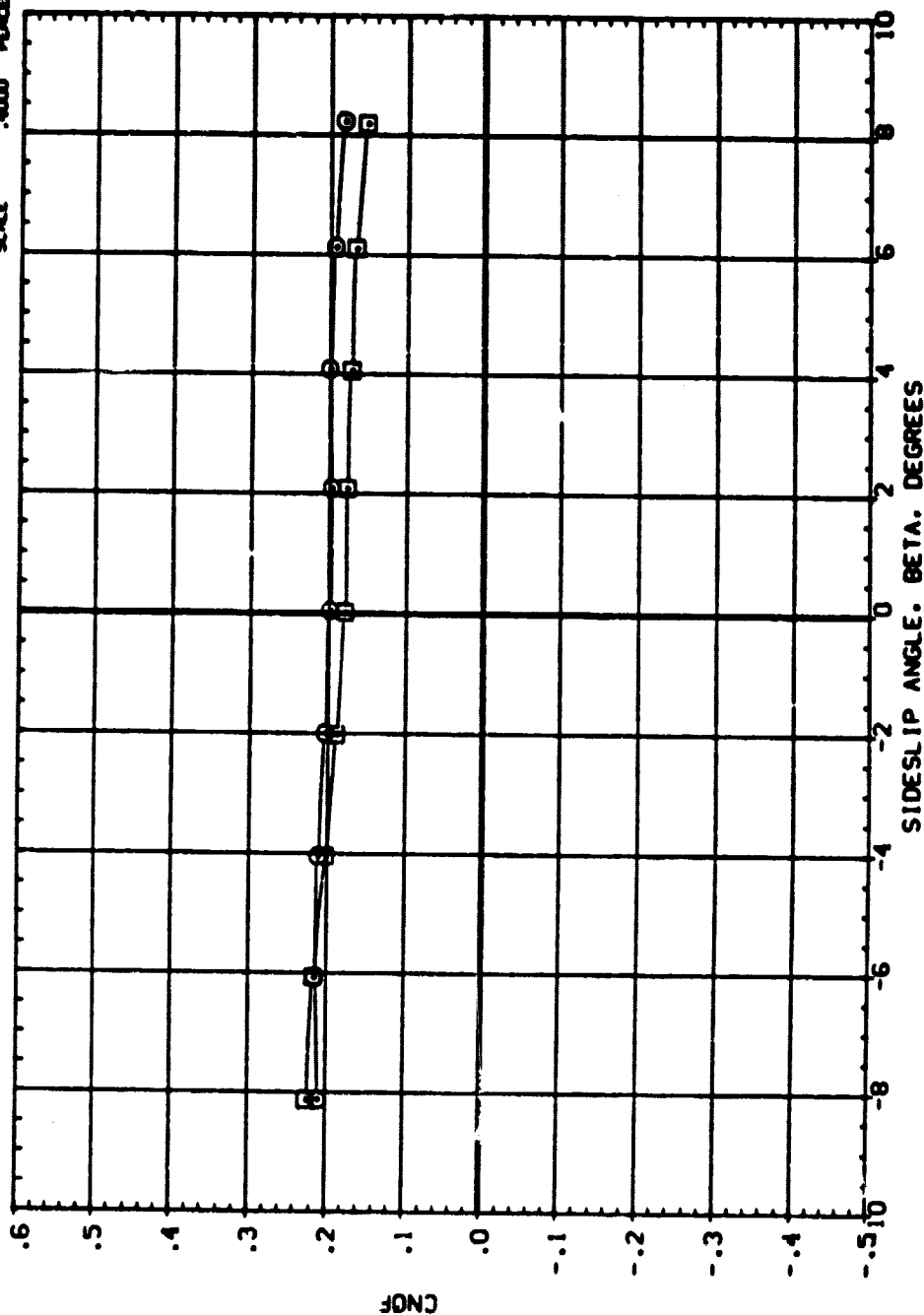


EFFECT OF ET PROTUBERANCES

(O)MACH = 1.10

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION:
 (FIBRES) 8 FAZB. MSFC TWT 656. COF 16. 02V22MMAATT23
 (FIBRES) 8 FAZB. MSFC TWT 656. COF 16. 02V22MMAATT33

REFERENCE INFORMATION
 SHEET 6.1580 50. IN
 LREF 5.1612 10. IN
 BRKF 3.7470 10. IN
 VREF 2.7120 10. IN
 VREF .0000 10. IN
 ZREF .0000 10. IN
 SCALE .0000 FEET

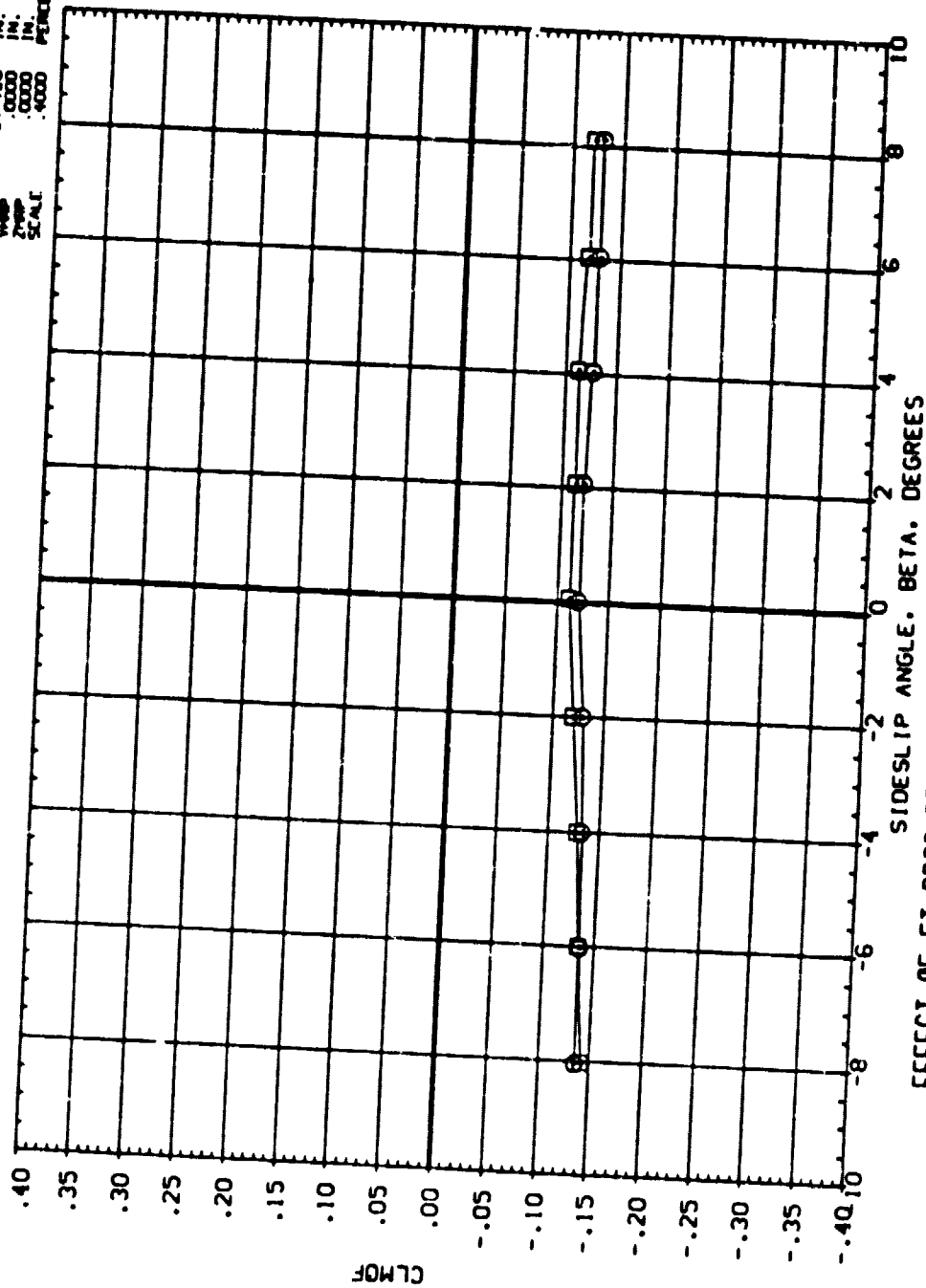


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (F87005) 8 FA28. MSFC TV 556. CONF 10. 02VZ2PMAA11253
 (F87005) 8 FA28. MSFC TV 556. CONF 10. 02VZ2PMAA11253

REFERENCE INFORMATION
 SET 8.1580 50. IN.
 LIFT 3.1612 IN.
 DRIFT 2.7470 IN.
 WIND 2.7120 IN.
 ZAMP .0000 IN.
 SCALE .4000 PERCENT

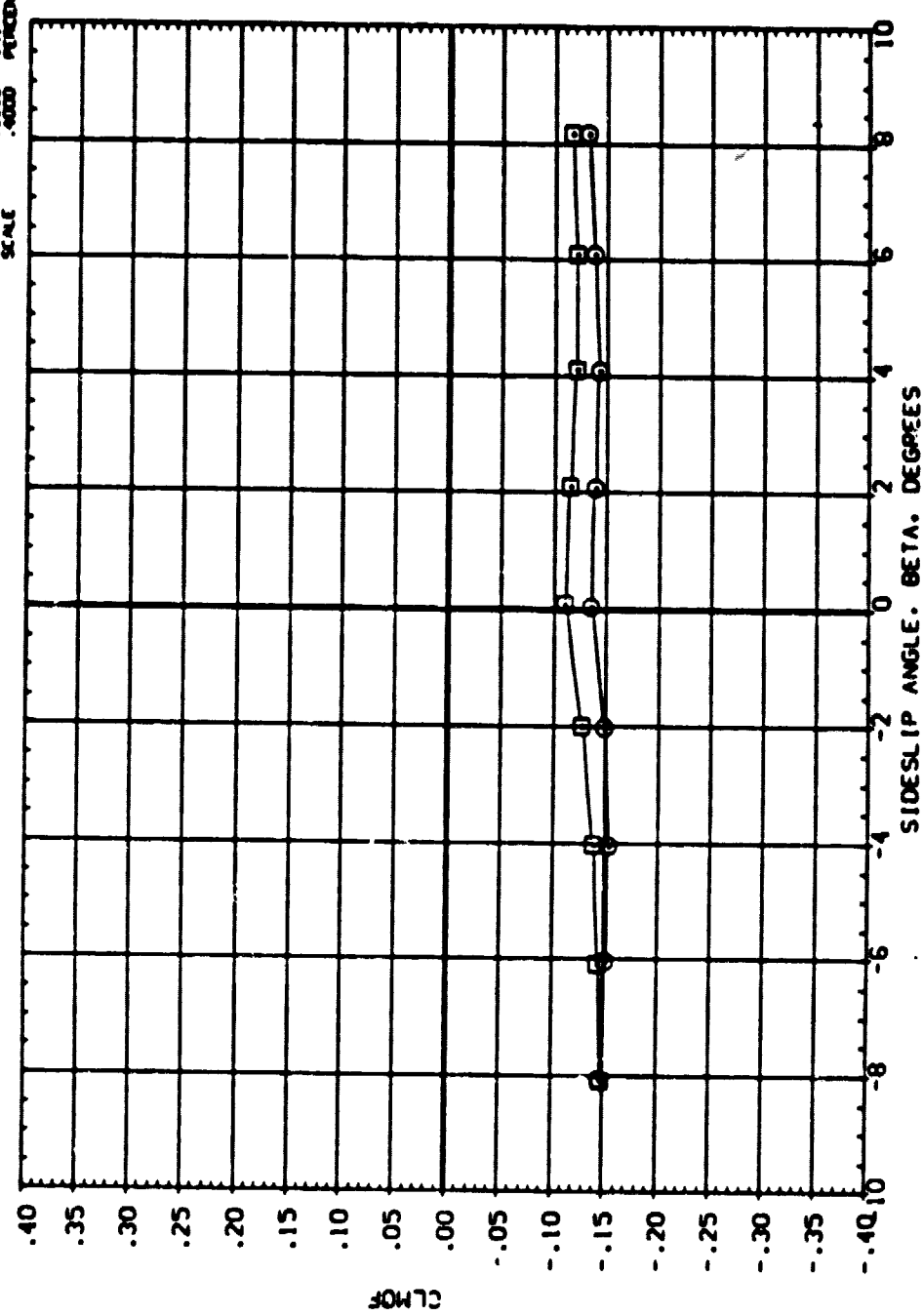


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: 8
 (F2205) (F2209)
 CONFIGURATION DESCRIPTION:
 FA20: M57C T4T G56: CONF 16: G2V2Z20MAAT123
 FA20: M57C T4T G56: CONF 16: G2V2Z20MAAT123

REFERENCE INFORMATION:
 SET: 6.1980 IN.
 LIFT: 3.1612 IN.
 DRIFT: 3.7470 IN.
 SWP: 3.7120 IN.
 TAP: .0000 IN.
 SCALE: .0000 IN.
 PITCH: .0000 IN.

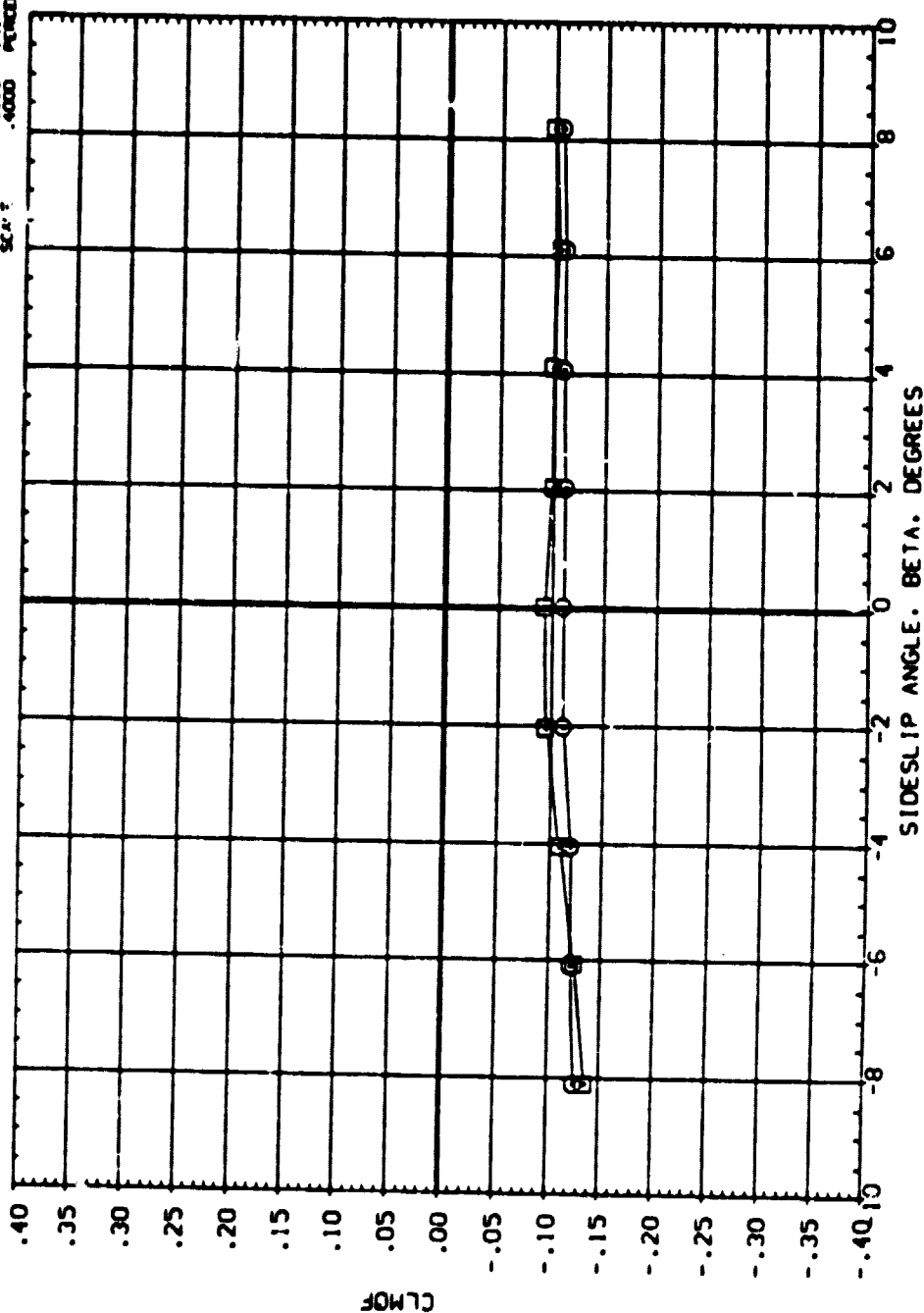


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: PA20. M2C 141 556. CONF 16. 0743E200A11253
 (F2005) PA20. M2C 141 556. CONF 16. 0743E200A11253

REFERENCE INFORMATION
 SET: 6.1380 IN. IN.
 LIFT: 5.1612 IN. IN.
 MOMENT: 2.7470 IN. IN.
 YAW: 2.7120 IN. IN.
 SCALE: .0000 IN. IN.
 SCALE: .4000 IN. IN.

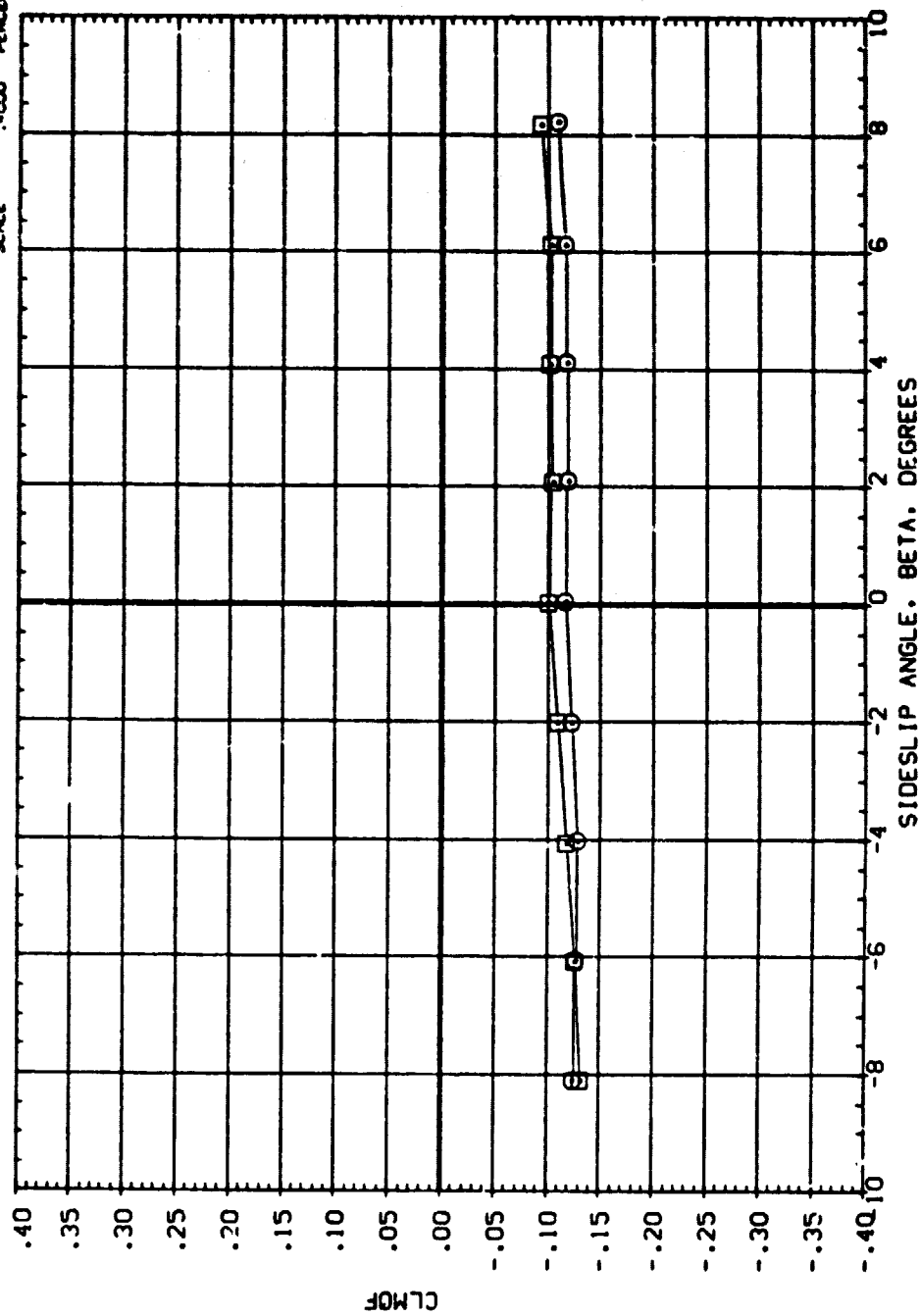


EFFECT OF ET PROTUBERANCES

(C)MACH = 1.05

DATA SET SYMBOL: (FB2805) **B** CONFIGURATION DESCRIPTION: FA28: MSFC TNT 656. CONF 1G. ONZE20AA11353
 (FB2805) FA28: MSFC TNT 656. CONF 1G. ONZE20AA11353

REFERENCE INFORMATION
 SREF: 8.1880 80. IN
 LREF: 5.1612 80. IN
 BREF: 2.7120 80. IN
 VREF: 2.7120 80. IN
 ZREF: .0000 80. IN
 SCALE: .0000 PERCENT

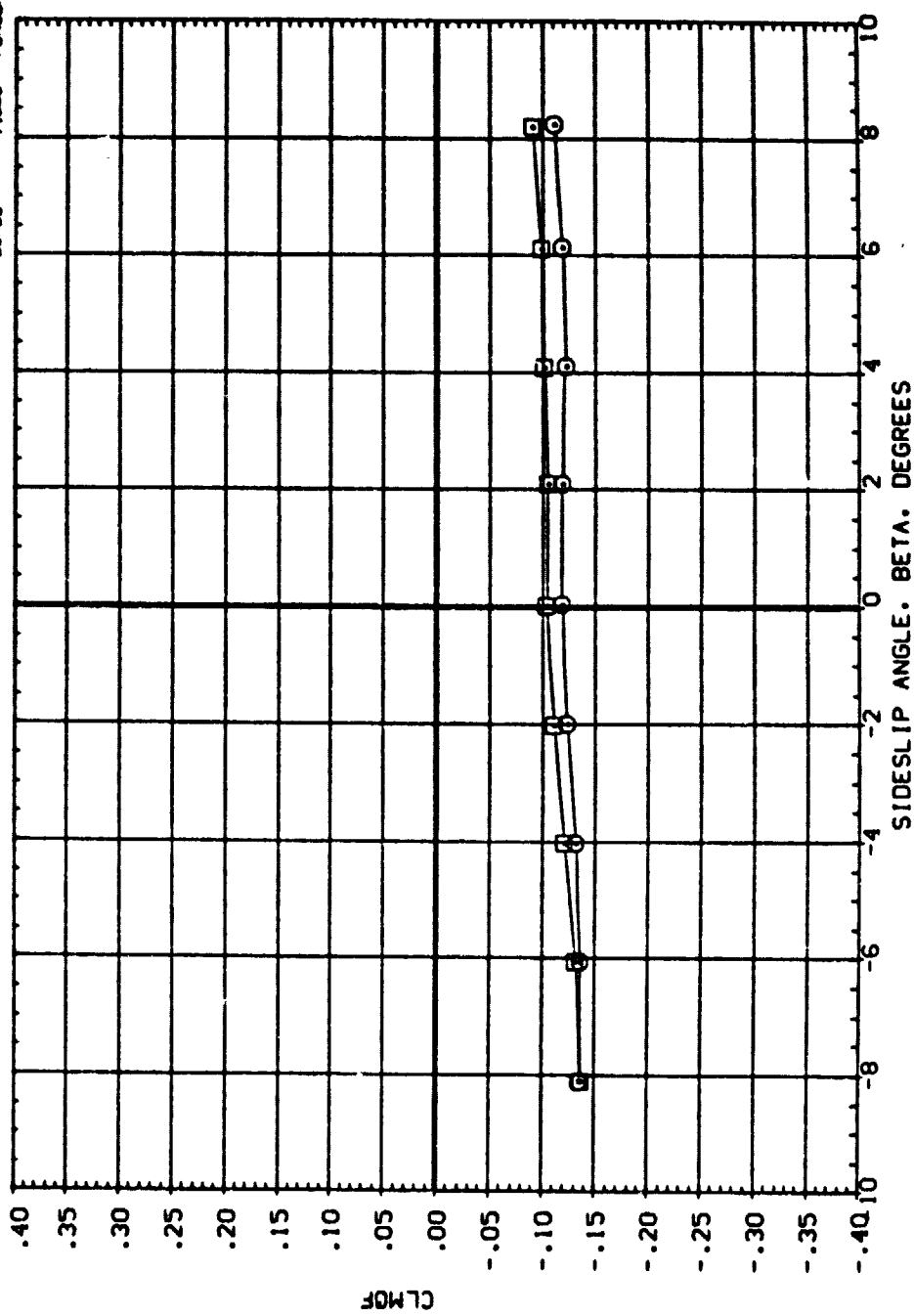


EFFECT OF ET PROTUBERANCES

(D)MACH = 1.10

DATA SET SYMBOL: B
 (FB2005) (FB2009)
 CONFIGURATION DESCRIPTION:
 FA38. MSFC TWT 656. CONF IG. 00VZ2MMAATT503
 FA38. MSFC TWT 656. CONF IG. 00VZ2MMAATT503

REFERENCE INFORMATION
 SREF 8.1880 IN
 LREF 1.012 IN
 MREF 2.7172 IN
 PREF 2.7120 IN
 VREF .0000 IN
 ZREF .0000 IN
 SCALE .0000 PERCENT

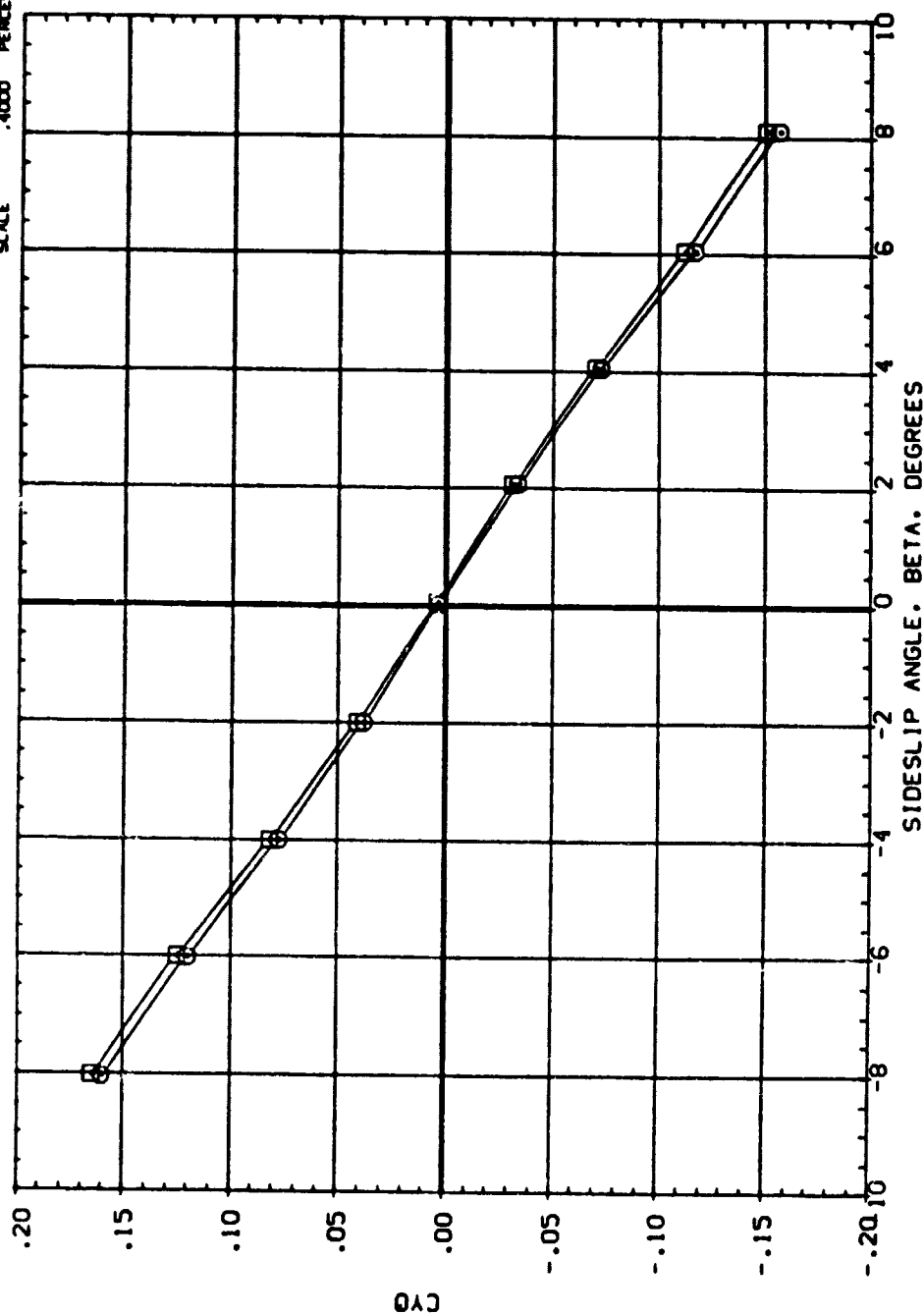


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2805) □ FA28. MSFC TVT 656. CONF 1G. 02V2E2NVAAT153
 (FB2805) □ FA28. MSFC TVT 656. CONF 1G. 02V2E2NVAAT153

REFERENCE INFORMATION
 SREF 6.1880 IN
 LREF 3.1612 IN
 BREF 3.2470 IN
 XREF 2.7120 IN
 YREF .0000 IN
 ZREF .0000 IN
 SCALE .4000 PERCENT

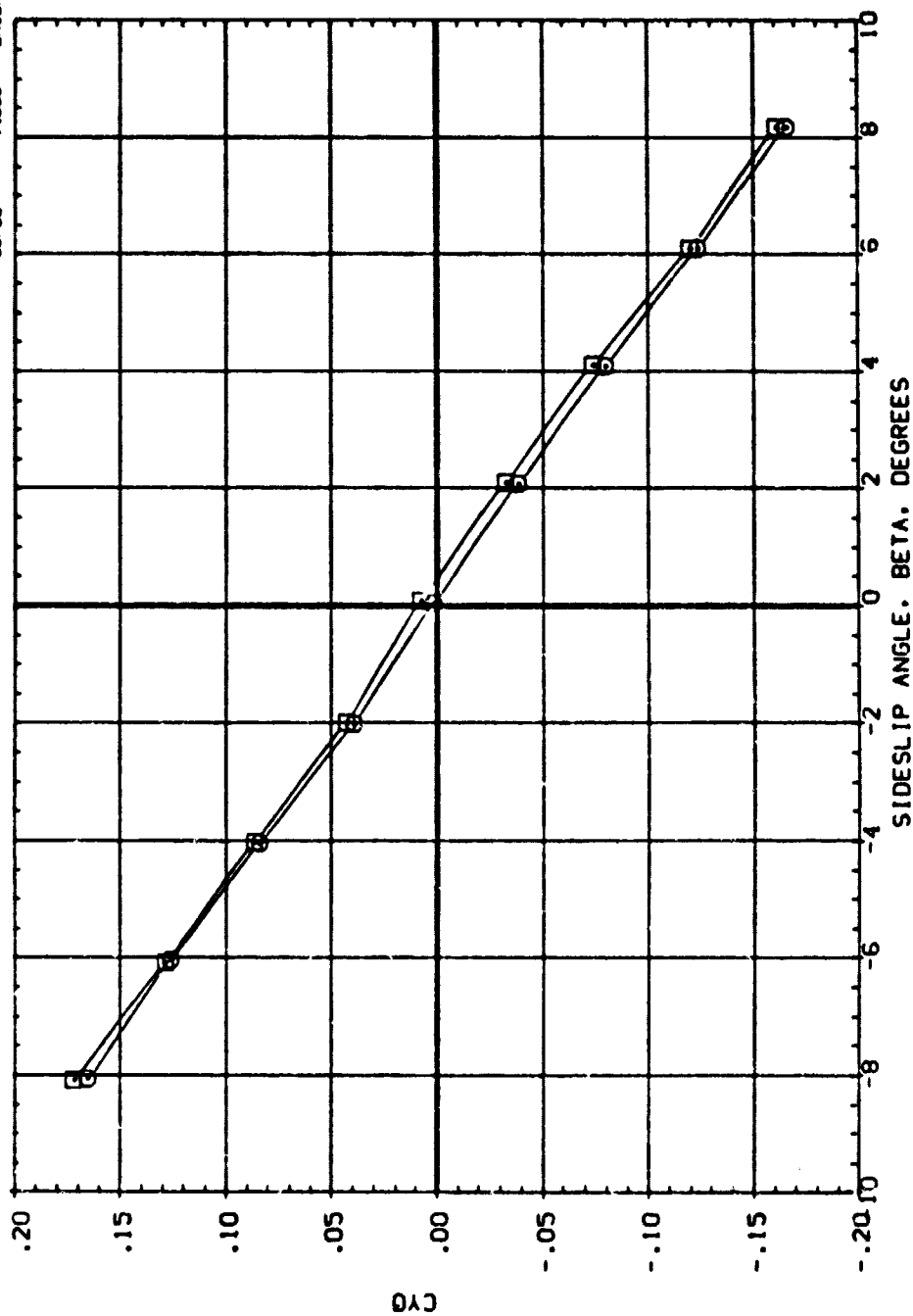


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL: FB2805
 CONFIGURATION DESCRIPTION: FA28. MSFC TWT 656. CONF 1G. Q2VZ2Z00AA11253
 (FB2805) B FA28. MSFC TWT 656. CONF 1G. Q2VZ2Z00AA11253

REFERENCE INFORMATION
 SREF 6.1880 IN
 LREF 5.1812 IN
 BREF 2.7470 IN
 YREF 2.7120 IN
 YHSP .0000 IN
 ZHSP .0000 IN
 SCALE .4000 PERCENT

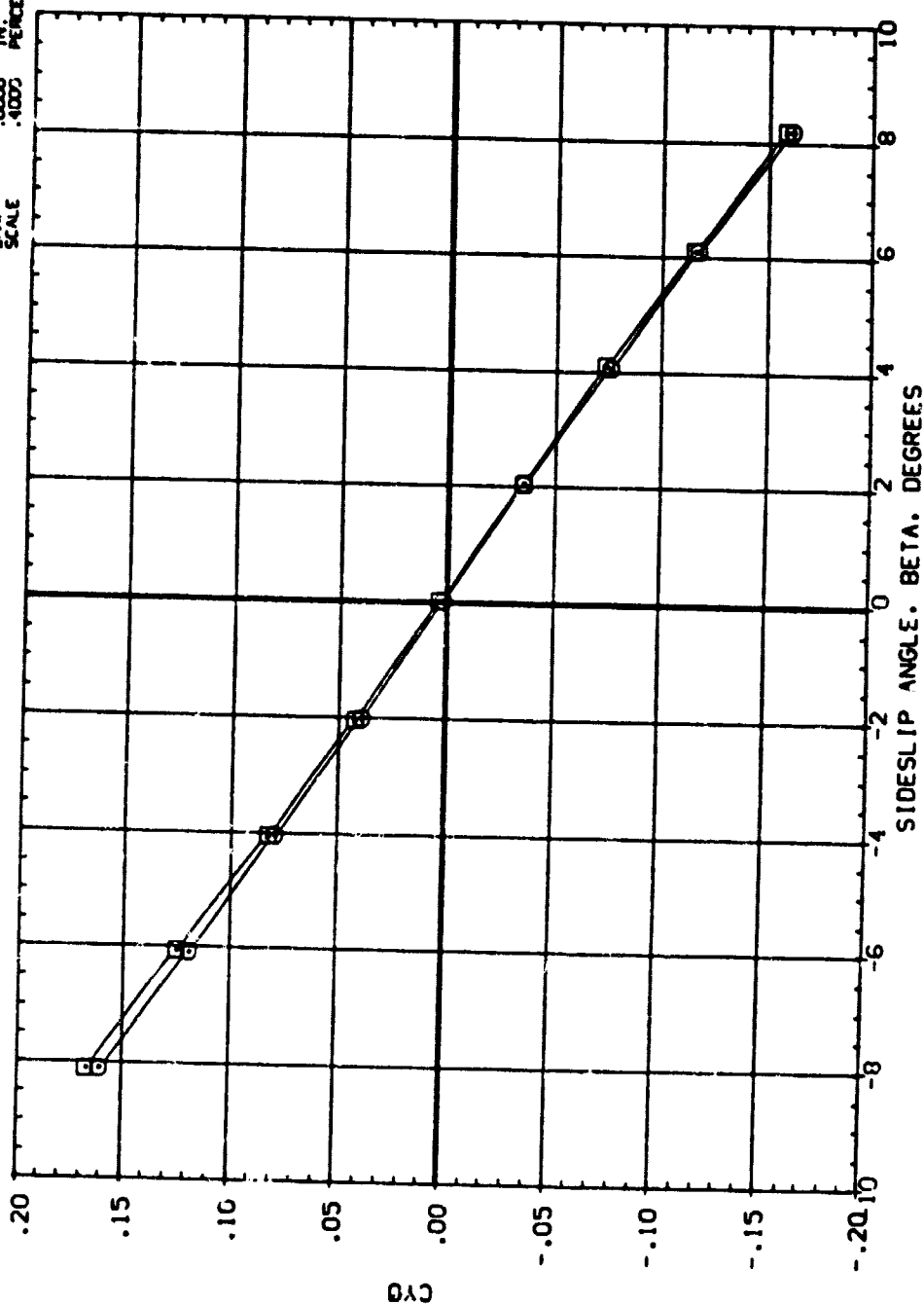


EFFECT OF ET PROTRUDANCES

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2005) B FA28. MSFC TWT 656. CONF 10. CONVEZMAA11353
 (FB2009) B FA28. MSFC TWT 656. CONF 10. CONVEZMAA11353

REFERENCE INFORMATION
 SREF 8.1580 90. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 XREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0005 PERCENT

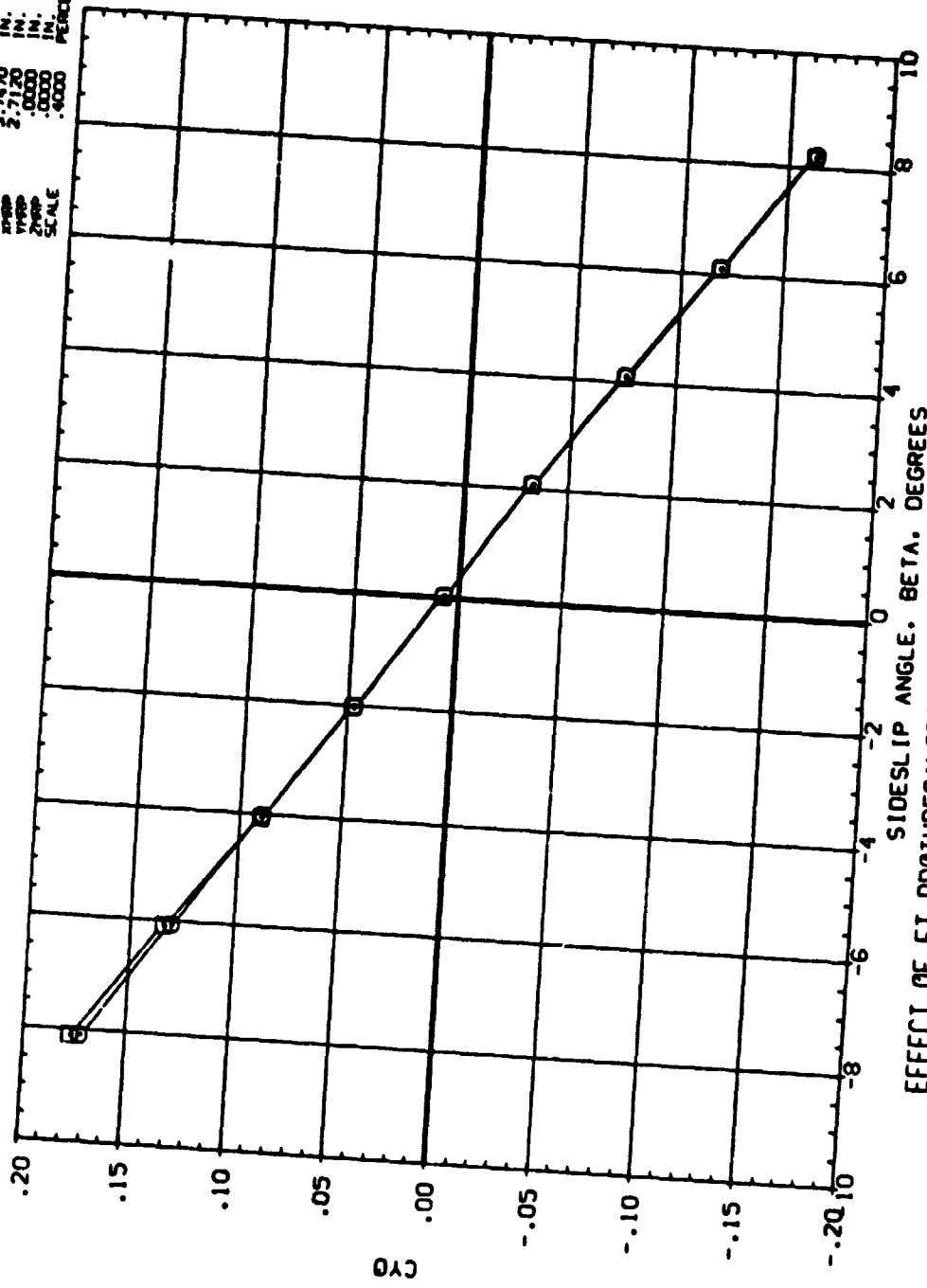


EFFECT OF ET PROTUBERANCES

(C)MACH = 1.05

DATA SET SYMBOL: B
 CONFIGURATION DESCRIPTION: FA28, MSC 147 556, CONF IG. 0242200AATT353
 FA28, MSC 147 556, CONF IG. 0242200AATT353

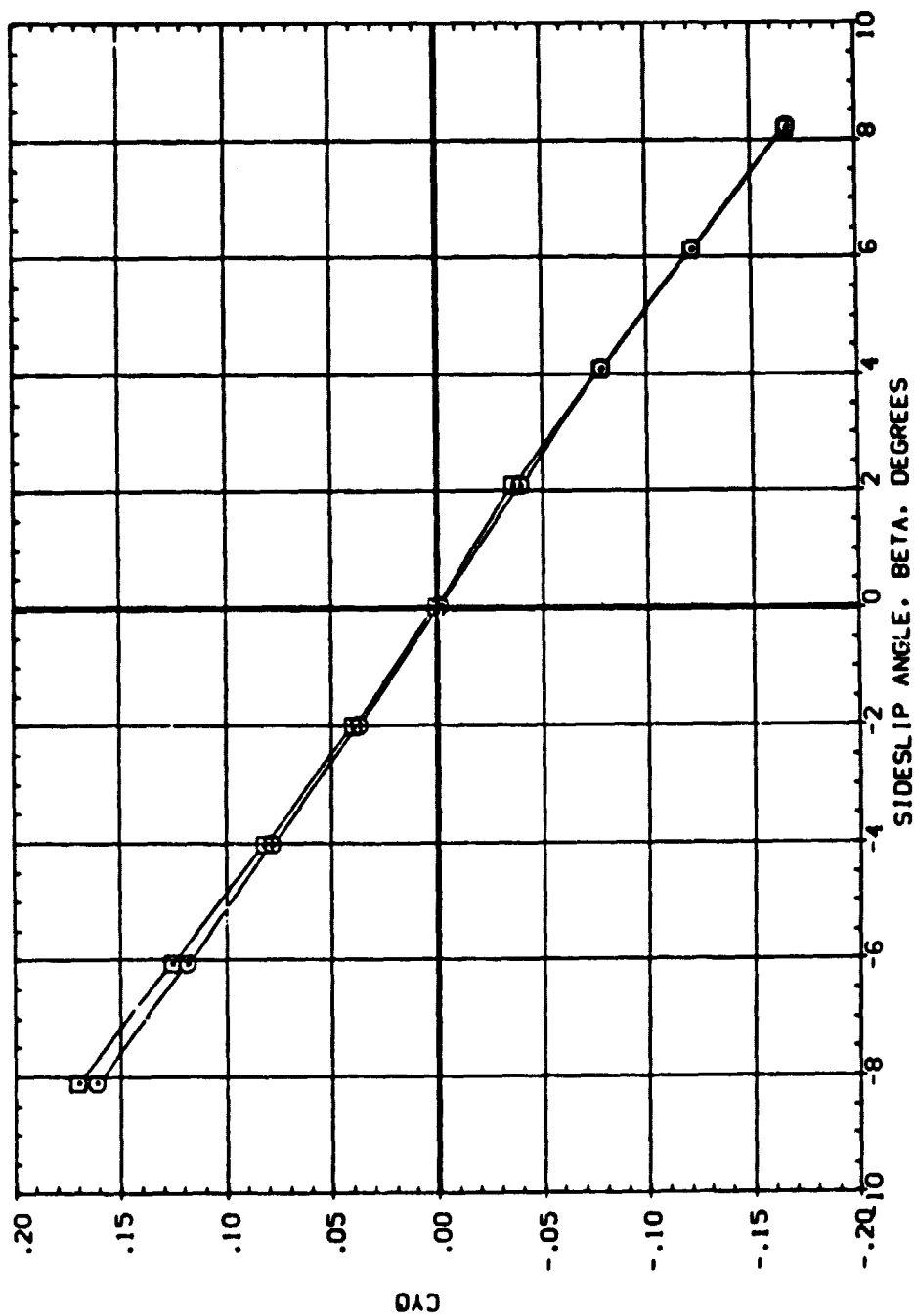
REFERENCE INFORMATION
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 LREF 5.1612 IN.
 BREF 2.7470 IN.
 TREF 2.7120 IN.
 TREF .0000 IN.
 TREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF ET PROTUBERANCES
 (O)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2005) B FA28. MSFC TVT 656. CONF 10. QZVZE200AA11353
 (FB2009) B FA28. MSFC TVT 656. CONF 10. QZVZE200AA11353

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

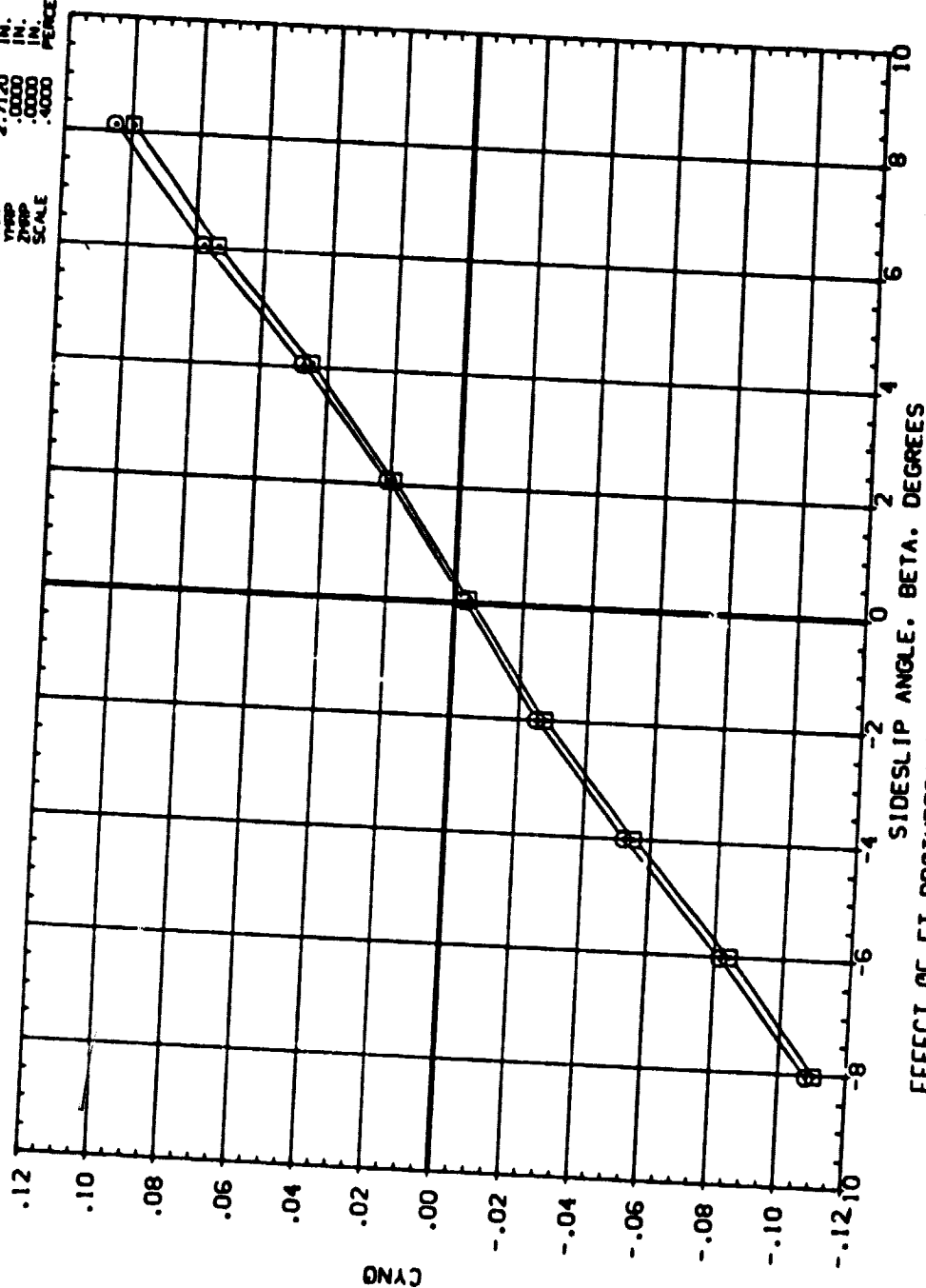


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(FB2806)	FA28, MSFC IVT 656, CONFIG.
(FB2809)	FA28, MSFC IVT 656, CONFIG.

REFERENCE INFORMATION	
SQET	6.180 IN.
LAF	5.1612 IN.
BRF	3.7470 IN.
TRPP	2.7120 IN.
TRPP	.0000 IN.
TRPP	.0000 IN.
SCALE	.4000 PER IN.


$$(\lambda)_{\text{MACH}} = .60$$

DATA SET SYMBOL
(FB2805)
(FB2809)

CONFIGURATION DESCRIPTION:

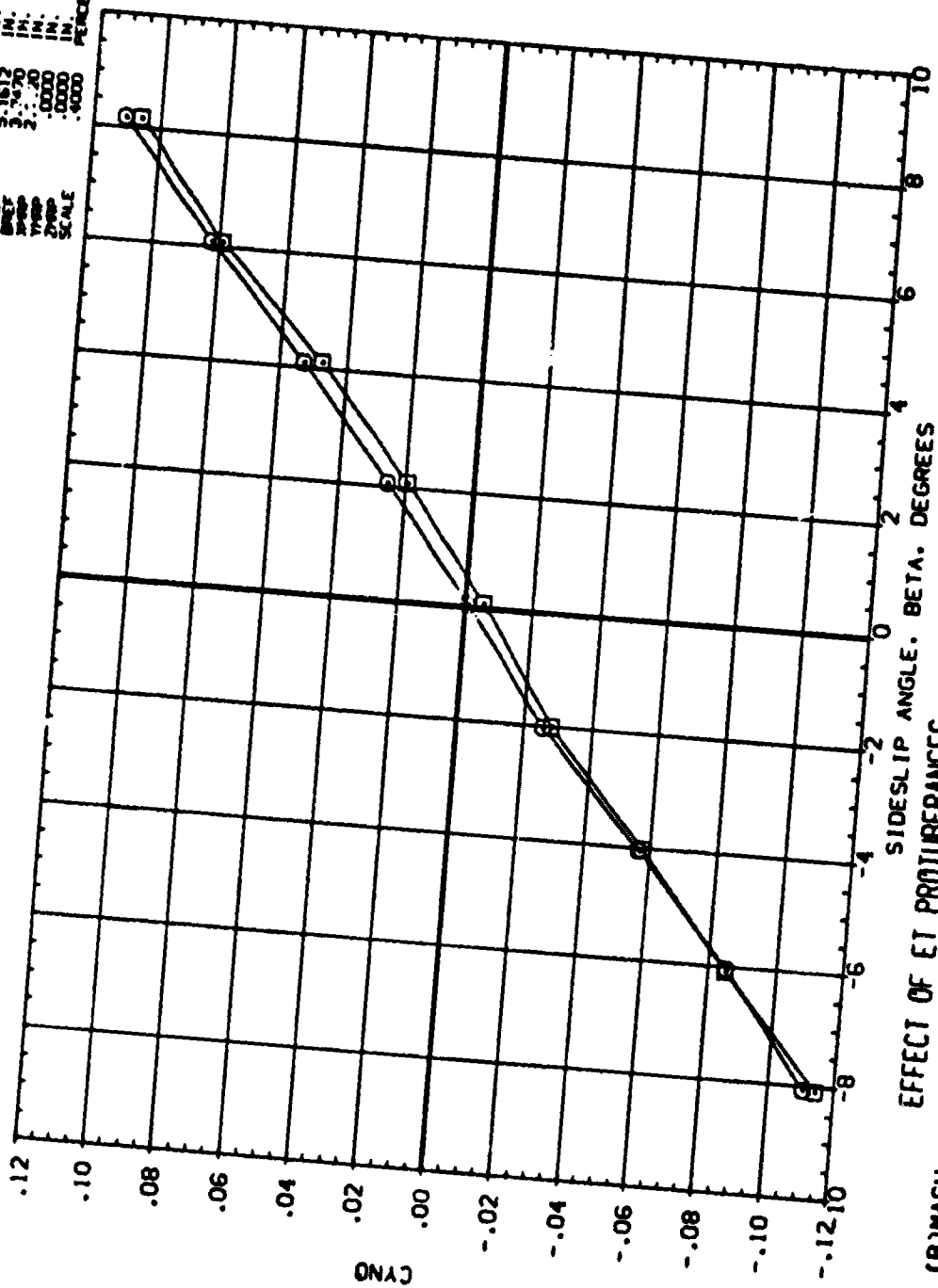
LOG	LOCATION	DESCRIPTION
FA29	MSFC TWT SEC	

0274 0275 0276 0277 0278 0279 0280 0281 0282 0283 0284 0285 0286 0287 0288 0289 0290 0291 0292 0293 0294 0295 0296 0297 0298 0299 0300 0301 0302 0303 0304 0305 0306 0307 0308 0309 0310 0311 0312 0313 0314 0315 0316 0317 0318 0319 0320 0321 0322 0323 0324 0325 0326 0327 0328 0329 0330 0331 0332 0333 0334 0335 0336 0337 0338 0339 0340 0341 0342 0343 0344 0345 0346 0347 0348 0349 0350 0351 0352 0353 0354 0355 0356 0357 0358 0359 0360 0361 0362 0363 0364 0365 0366 0367 0368 0369 0370 0371 0372 0373 0374 0375 0376 0377 0378 0379 0380 0381 0382 0383 0384 0385 0386 0387 0388 0389 0390 0391 0392 0393 0394 0395 0396 0397 0398 0399 0400 0401 0402 0403 0404 0405 0406 0407 0408 0409 0410 0411 0412 0413 0414 0415 0416 0417 0418 0419 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429 0430 0431 0432 0433 0434 0435 0436 0437 0438 0439 0440 0441 0442 0443 0444 0445 0446 0447 0448 0449 0450 0451 0452 0453 0454 0455 0456 0457 0458 0459 0460 0461 0462 0463 0464 0465 0466 0467 0468 0469 0470 0471 0472 0473 0474 0475 0476 0477 0478 0479 0480 0481 0482 0483 0484 0485 0486 0487 0488 0489 0490 0491 0492 0493 0494 0495 0496 0497 0498 0499 0500 0501 0502 0503 0504 0505 0506 0507 0508 0509 0510 0511 0512 0513 0514 0515 0516 0517 0518 0519 0520 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536 0537 0538 0539 0540 0541 0542 0543 0544 0545 0546 0547 0548 0549 0550 0551 0552 0553 0554 0555 0556 0557 0558 0559 0560 0561 0562 0563 0564 0565 0566 0567 0568 0569 0570 0571 0572 0573 0574 0575 0576 0577 0578 0579 0580 0581 0582 0583 0584 0585 0586 0587 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601 0602 0603 0604 0605 0606 0607 0608 0609 0610 0611 0612 0613 0614 0615 0616 0617 0618 0619 0620 0621 0622 0623 0624 0625 0626 0627 0628 0629 0630 0631 0632 0633 0634 0635 0636 0637 0638 0639 0640 0641 0642 0643 0644 0645 0646 0647 0648 0649 0650 0651 0652 0653 0654 0655 0656 0657 0658 0659 0660 0661 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671 0672 0673 0674 0675 0676 0677 0678 0679 0680 0681 0682 0683 0684 0685 0686 0687 0688 0689 0690 0691 0692 0693 0694 0695 0696 0697 0698 0699 0700 0701 0702 0703 0704 0705 0706 0707 0708 0709 0710 0711 0712 0713 0714 0715 0716 0717 0718 0719 0720 0721 0722 0723 0724 0725 0726 0727 0728 0729 0730 0731 0732 0733 0734 0735 0736 0737 0738 0739 0740 0741 0742 0743 0744 0745 0746 0747 0748 0749 0750 0751 0752 0753 0754 0755 0756 0757 0758 0759 0760 0761 0762 0763 0764 0765 0766 0767 0768 0769 0770 0771 0772 0773 0774 0775 0776 0777 0778 0779 0780 0781 0782 0783 0784 0785 0786 0787 0788 0789 0790 0791 0792 0793 0794 0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808 0809 0810 0811 0812 0813 0814 0815 0816 0817 0818 0819 0820 0821 0822 0823 0824 0825 0826 0827 0828 0829 0830 0831 0832 0833 0834 0835 0836 0837 0838 0839 0840 0841 0842 0843 0844 0845 0846 0847 0848 0849 0850 0851 0852 0853 0854 0855 0856 0857 0858 0859 0860 0861 0862 0863 0864 0865 0866 0867 0868 0869 0870 0871 0872 0873 0874 0875 0876 0877 0878 0879 0880 0881 0882 0883 0884 0885 0886 0887 0888 0889 0890 0891 0892 0893 0894 0895 0896 0897 0898 0899 0900 0901 0902 0903 0904 0905 0906 0907 0908 0909 0910 0911 0912 0913 0914 0915 0916 0917 0918 0919 0920 0921 0922 0923 0924 0925 0926 0927 0928 0929 0930 0931 0932 0933 0934 0935 0936 0937 0938 0939 0940 0941 0942 0943 0944 0945 0946 0947 0948 0949 0950 0951 0952 0953 0954 0955 0956 0957 0958 0959 0960 0961 0962 0963 0964 0965 0966 0967 0968 0969 0970 0971 0972 0973 0974 0975 0976 0977 0978 0979 0980 0981 0982 0983 0984 0985 0986 0987 0988 0989 0990 0991 0992 0993 0994 0995 0996 0997 0998 0999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1060 1061 1062 1063 1064 1065 1066 1067 1068 1069 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079 1080 1081 1082 1083 1084 1085 1086 1087 1088 1089 1090 1091 1092

1428, RESC 147 656, COV 16, 0227E 2000177353
CSC 1470004 32420, COV 16, 0227E 2000177353

COA 16. Q2VZEPAA775J

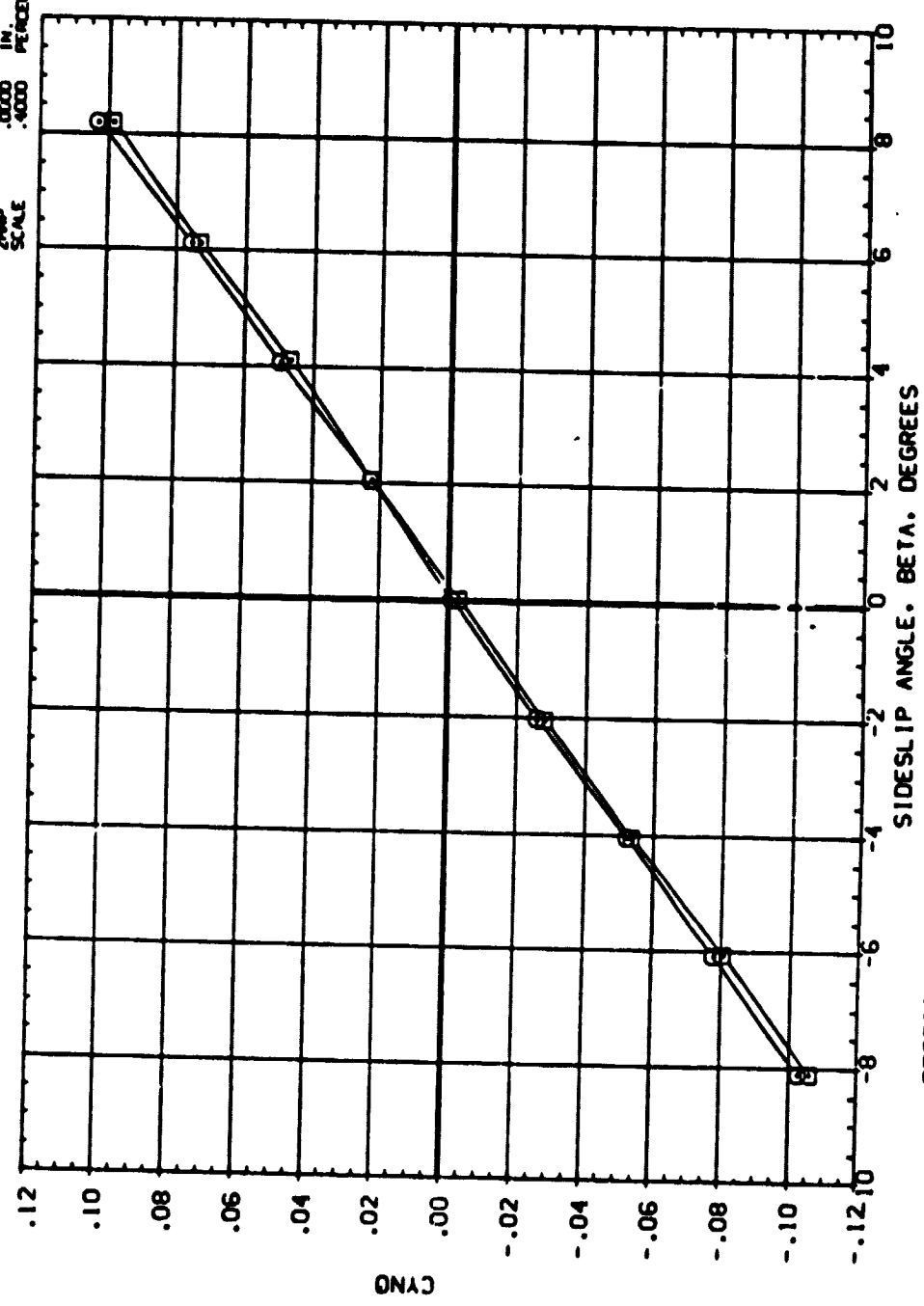
REFERENCE INFORMATION	
SHEET	8.190 50. IN.
LINE	5.1512 IN.
BREF	2.770 IN.
SPAC	2.20 IN.
WIND	.0000 IN.
TEMP	.0000 IN.
SCALE	.0000 PERIOD



(B)MACH = .90

DATA SET SYMBOL: B CONFIGURATION DESCRIPTION: FA28. MSC TWT 656. CD416. Q2V22MAATT253 (F2005) FA28. MSC TWT 656. CD416. Q2V22MAATT253 (F2009)

REFERENCE INFORMATION
 SHEET 8.1580 50. IN
 UNIT 1.612 IN.
 SPOT 2.7470 IN.
 YPROP 2.7120 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

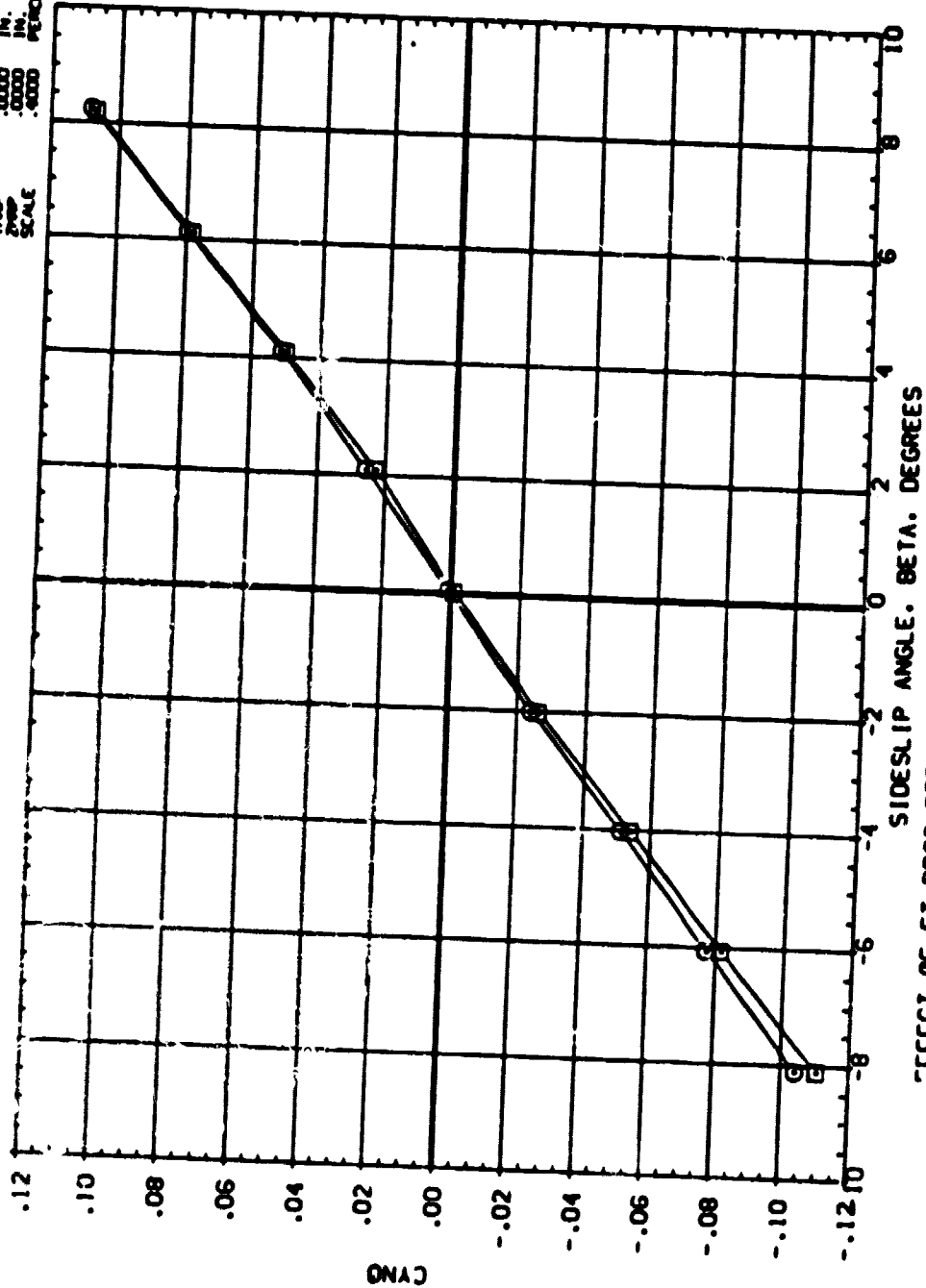


EFFECT OF ET PROTUBERANCES

(C)MACH = 1.05

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: FAIR, WING 101 656, CONFIG. 02VZL2MATT233
 (PERIODS) 8 FAIR, WING 101 656, CONFIG. 02VZL2MATT233

REFERENCE INFORMATION
 SET 8.1880 50. IN.
 LIFT 3.1612 IN.
 WING 2.7470 IN.
 WING 2.7120 IN.
 WING .0000 IN.
 WING .0000 IN.
 SCALE .0000 PERCENT

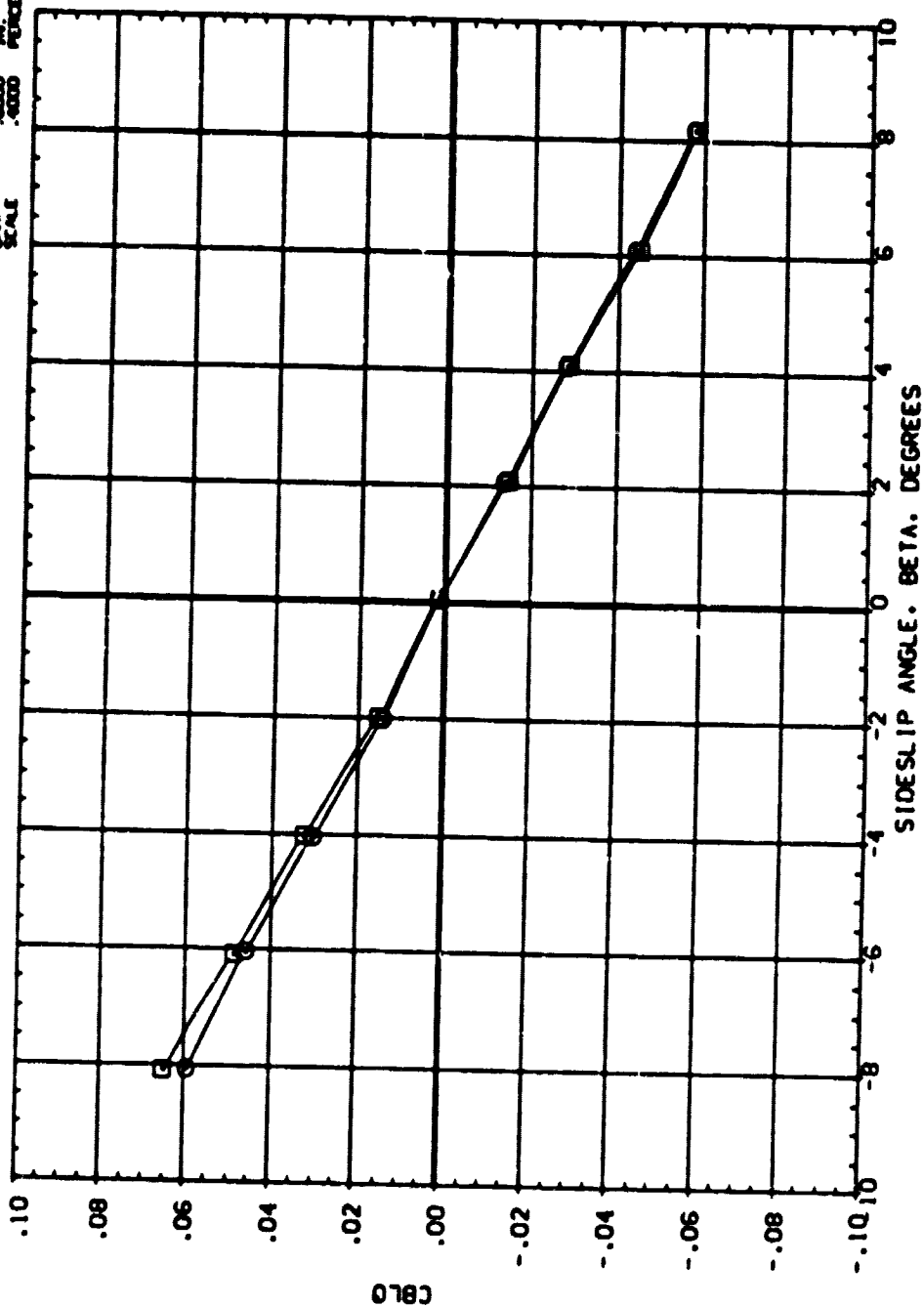


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.25

DATA SET SWED. CONFIGURATION DESCRIPTION
 (PERIODS) 8 FA28. MFC TVT 65%. CONFIG. CONVE. PARAMETERS
 (PERIODS) 8 FA28. MFC TVT 65%. CONFIG. CONVE. PARAMETERS

REFERENCE INFORMATION
 SET 8.000 IN.
 LIFT 9.1612 IN.
 DRAG 3.7170 IN.
 YAW .0000 IN.
 SCALE .0000 PERIOD

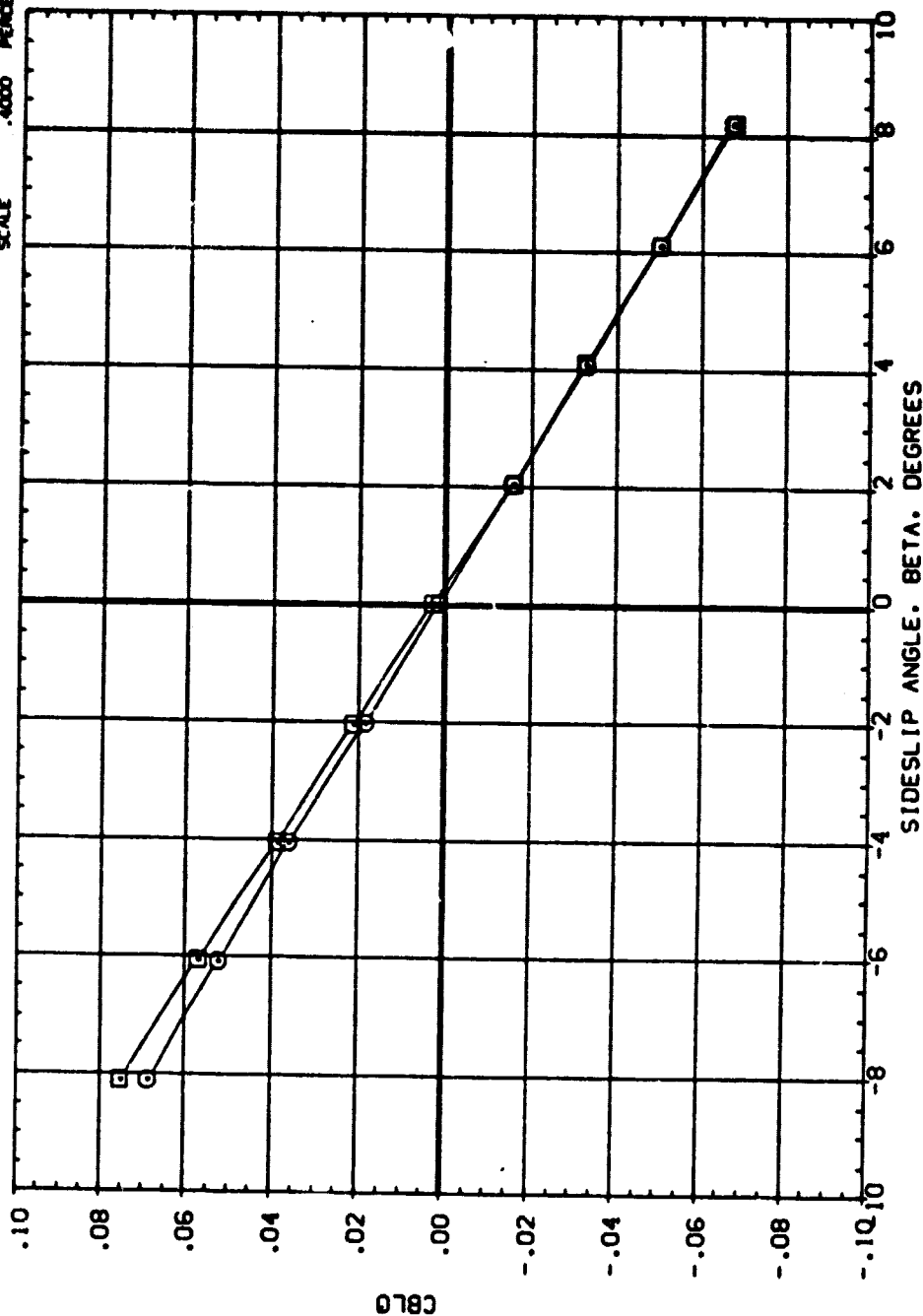


EFFECT OF ET PROTUBERANCES

(B) MACH = .90


DATA SET SYMBOL: (FB2805) \square CONFIGURATION DESCRIPTION: FA28. MSFC TVT 656. CONF IG. 02V2E20WAA1T353
(FB2805) \square FA28. MSFC TVT 656. CONF IG. 02V2E20WAA1T353

REFERENCE INFORMATION
SREF 6.1580 IN
LREF 5.1612 IN
BREF 3.2470 IN
XREF 2.7120 IN
YREF .0000 IN
ZREF .0000 IN
SCALE .4000 PERIOD

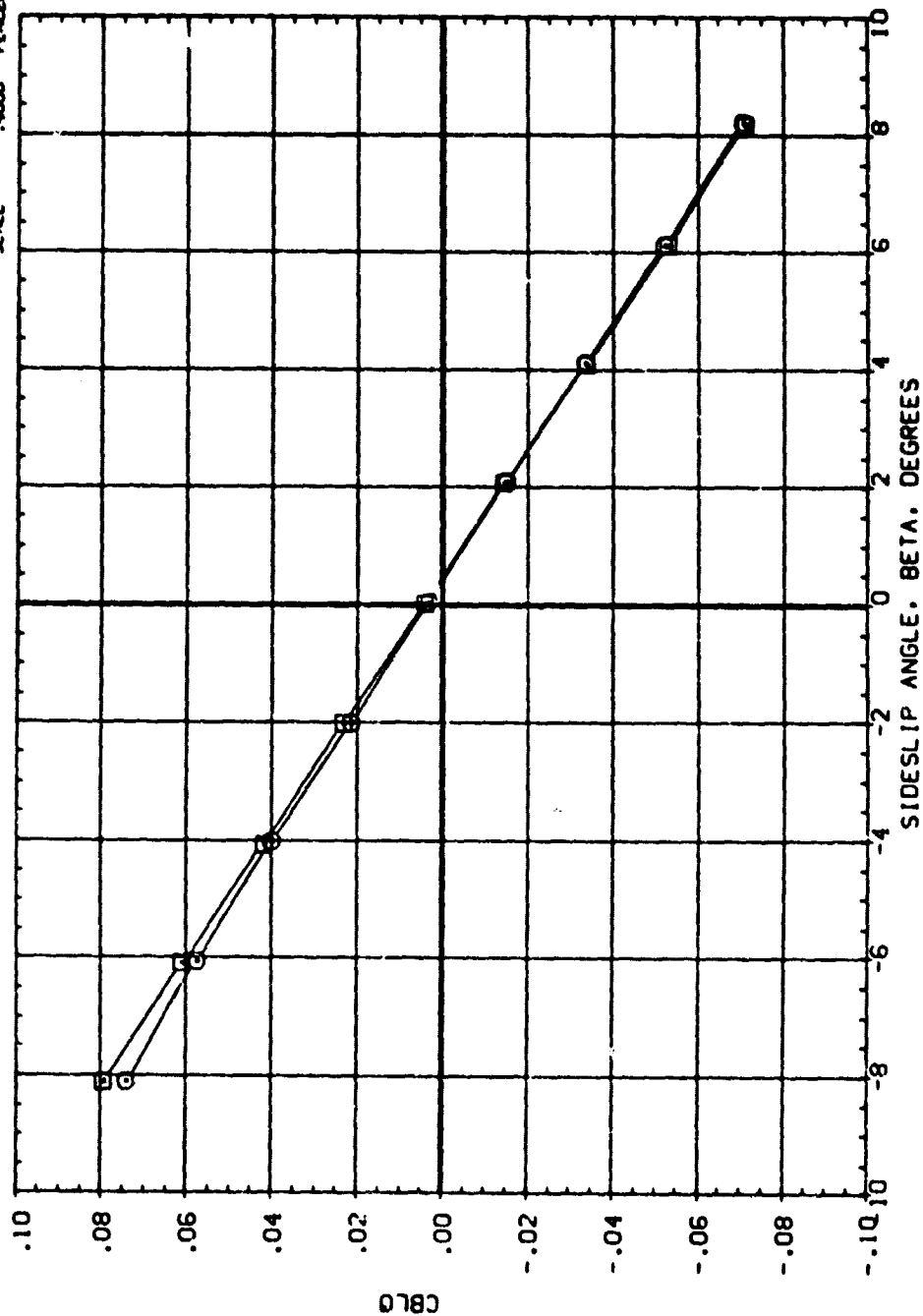


EFFECT OF ET PROTUBERANCES

(C)MACH = 1.05

DATA SET SYMBOL: (FB2805)  CONFIGURATION DESCRIPTION: FB28. MSFC INT 656. CONF IG. CONVEZDPAATT253
 (FB2809) FB28. MSFC INT 656. CONF IG. CONVEZDPAATT353

REFERENCE INFORMATION
 SHEET 6 1880 50. IN
 LINE 5 1672 IN.
 BREF 3 7170 IN.
 ZPROP 2 7120 IN.
 ZPROP 10000 IN.
 SCALE .4000 PERCENT

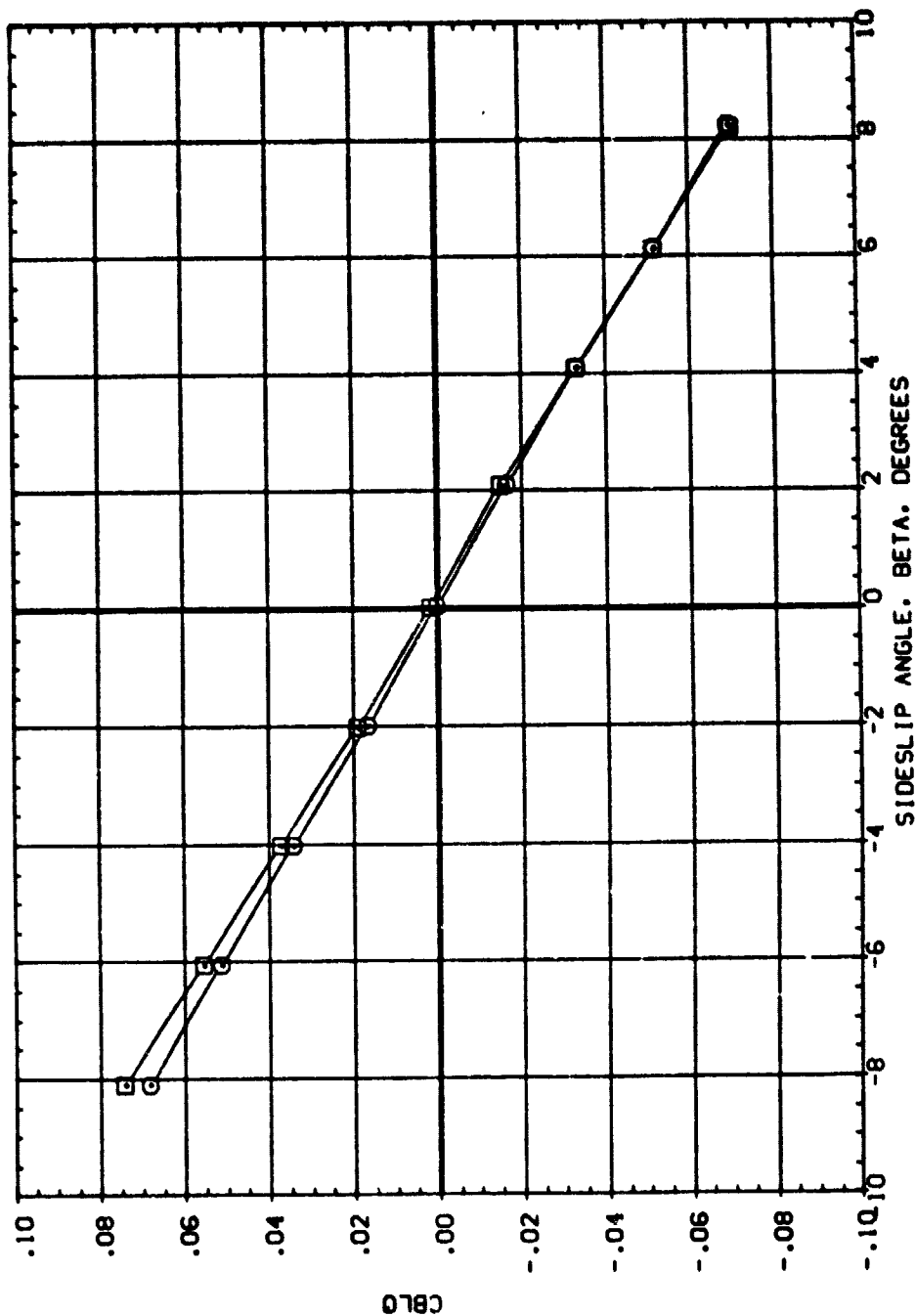


EFFECT OF ET PROTUBERANCES

(D)MACH = 1.10


DATA SET SYMBOL: CONFIGURATION DESCRIPTION
 (F82805) FA28. MSC TVT 656. CONF 1G. ORANGE 2MMATT1253
 (F82805) FA28. MSC TVT 656. CONF 1G. ORANGE 2MMATT1253

REFERENCE INFORMATION
 SWET 6.1280 IN.
 LWT 5.1612 IN.
 WWT 2.7470 IN.
 YWSP 2.7120 IN.
 ZWSP .0000 IN.
 SCALE .4000 PERCENT

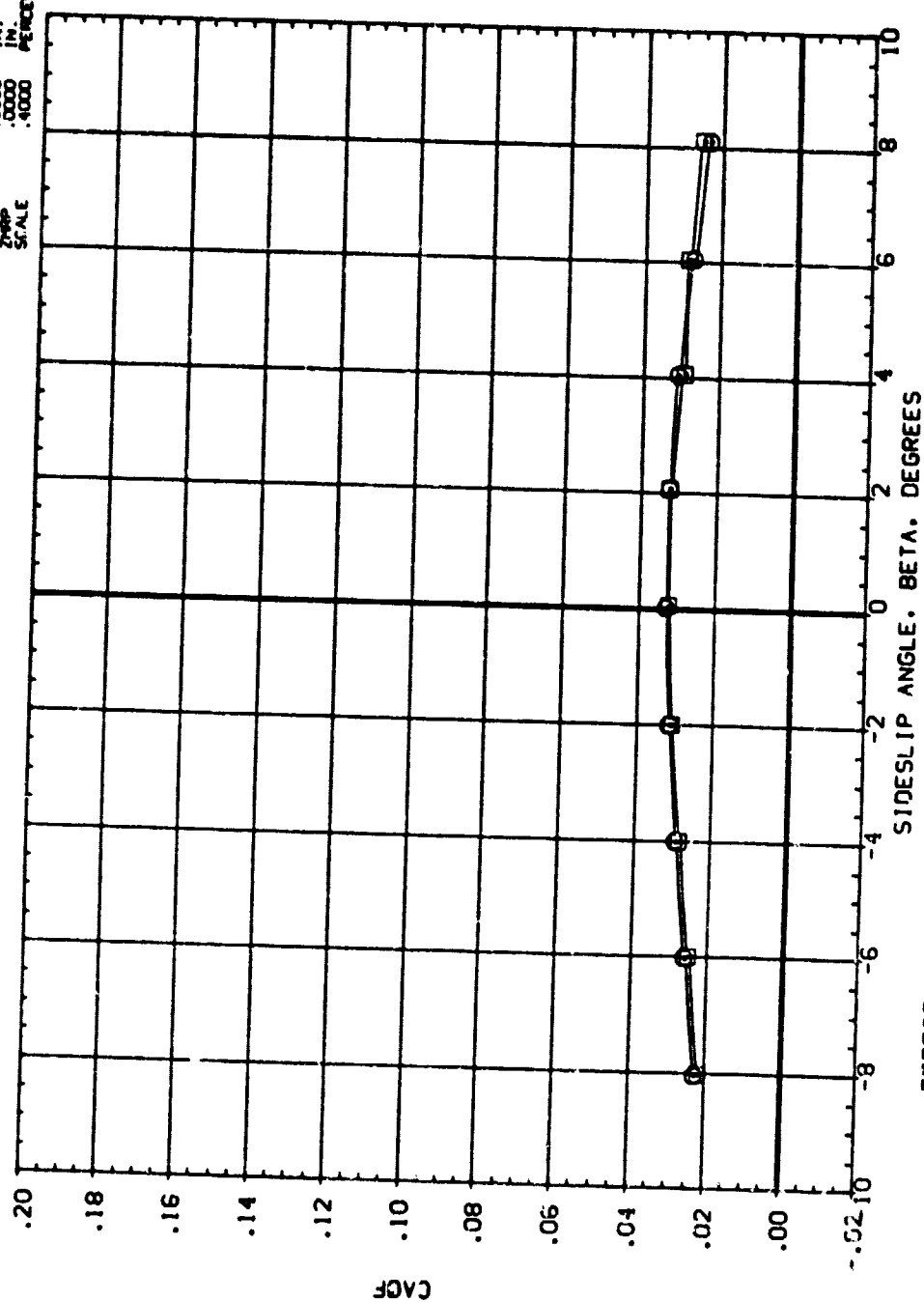


EFFECT OF ET PROTUBERANCES

(E)MACH = 1.25

DATA SET SYMBOL: (FB2805)  CONFIGURATION DESCRIPTION:
 FA28. MSC TWT 656. CONFIG. 02VZE2NWAAT1353
 FA28. MSC TWT 656. CONFIG. 02VZE2NPAAT1353

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

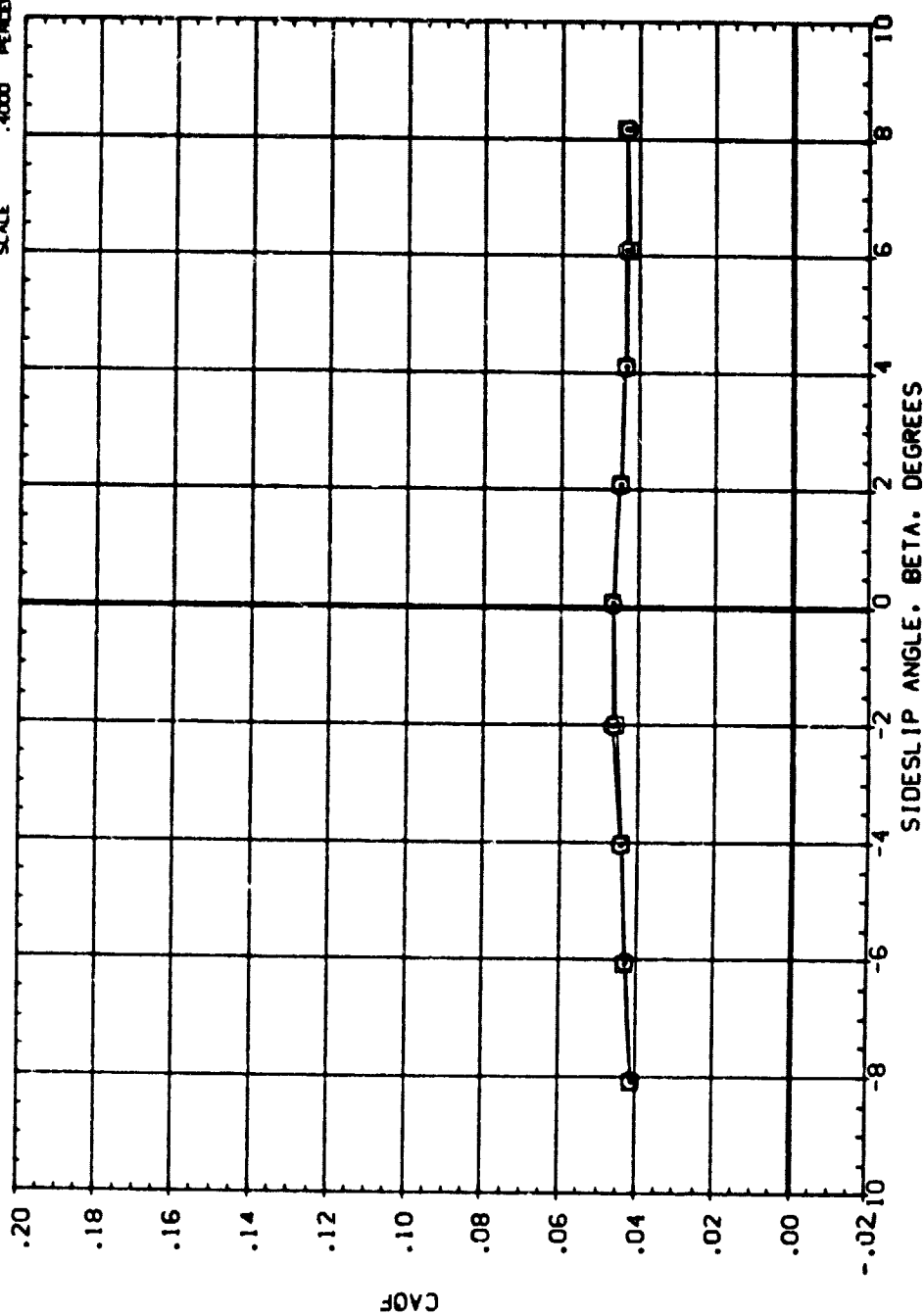


EFFECT OF ET PROTUBERANCES

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB808) 8 FA28. MSFC TWT 656. CONF 16. 02VZ27MAA11253
 (FB809) 8 FA28. MSFC TWT 656. CONF 16. 02VZ27MAA11253

REFERENCE INFORMATION
 SREF 8.1980 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 DRPP 2.7120 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .4000 PERCENT

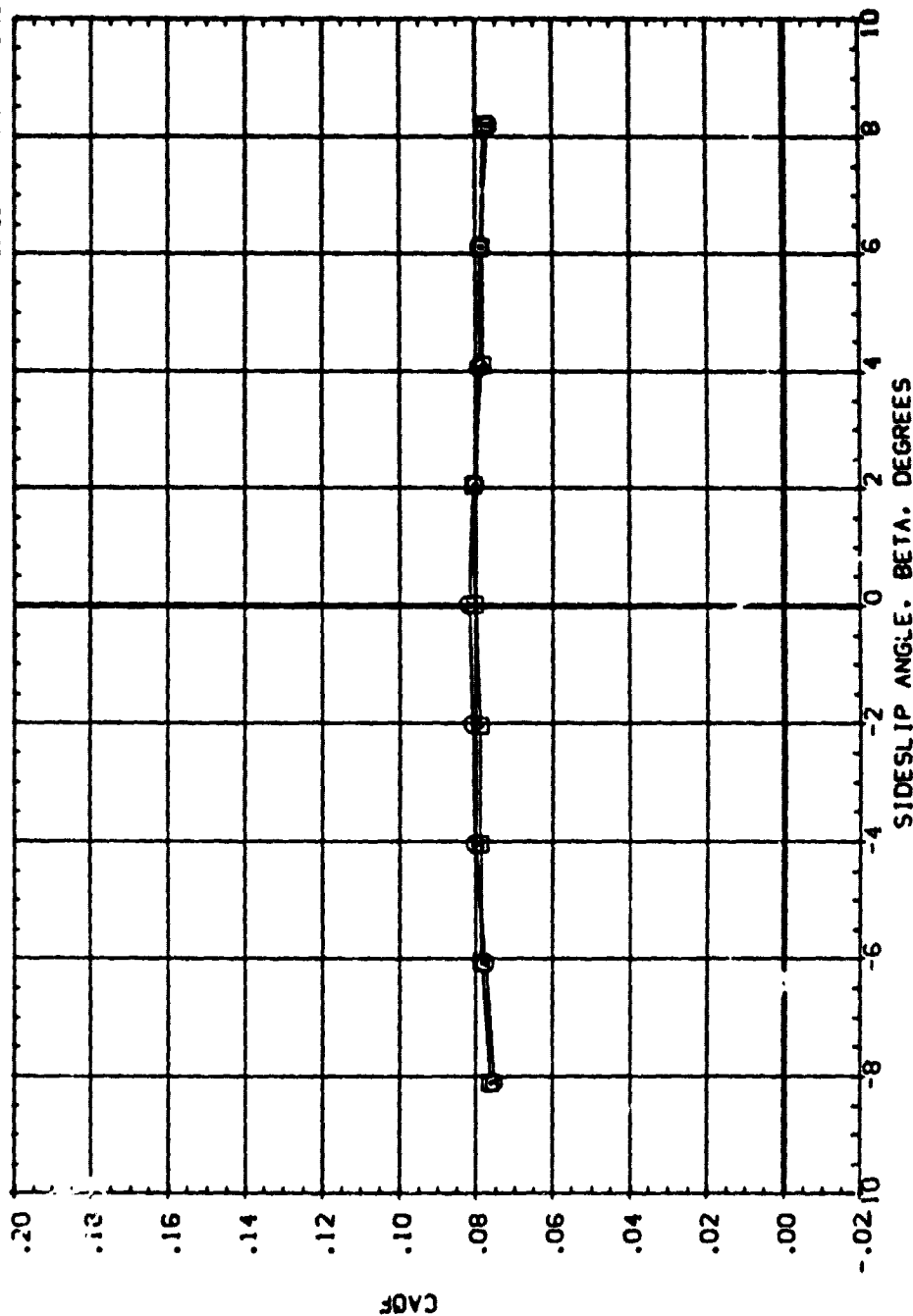


EFFECT OF ET PROTUBERANCES

(B)MACH = .90

DATA SET SYMBOL: **B** CONFIGURATION DESCRIPTION:
 (FB2005) FA28. MSFC TWT 656. CONF 16. Q2VZ20NVA11353
 (FB2009) FA28. MSFC TWT 656. CONF 16. Q2VZ20NVA11353

REFERENCE INFORMATION:
 SREF 8.1980 SQ. IN.
 LREF 8.1612 IN.
 WREF 3.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 POUNDS

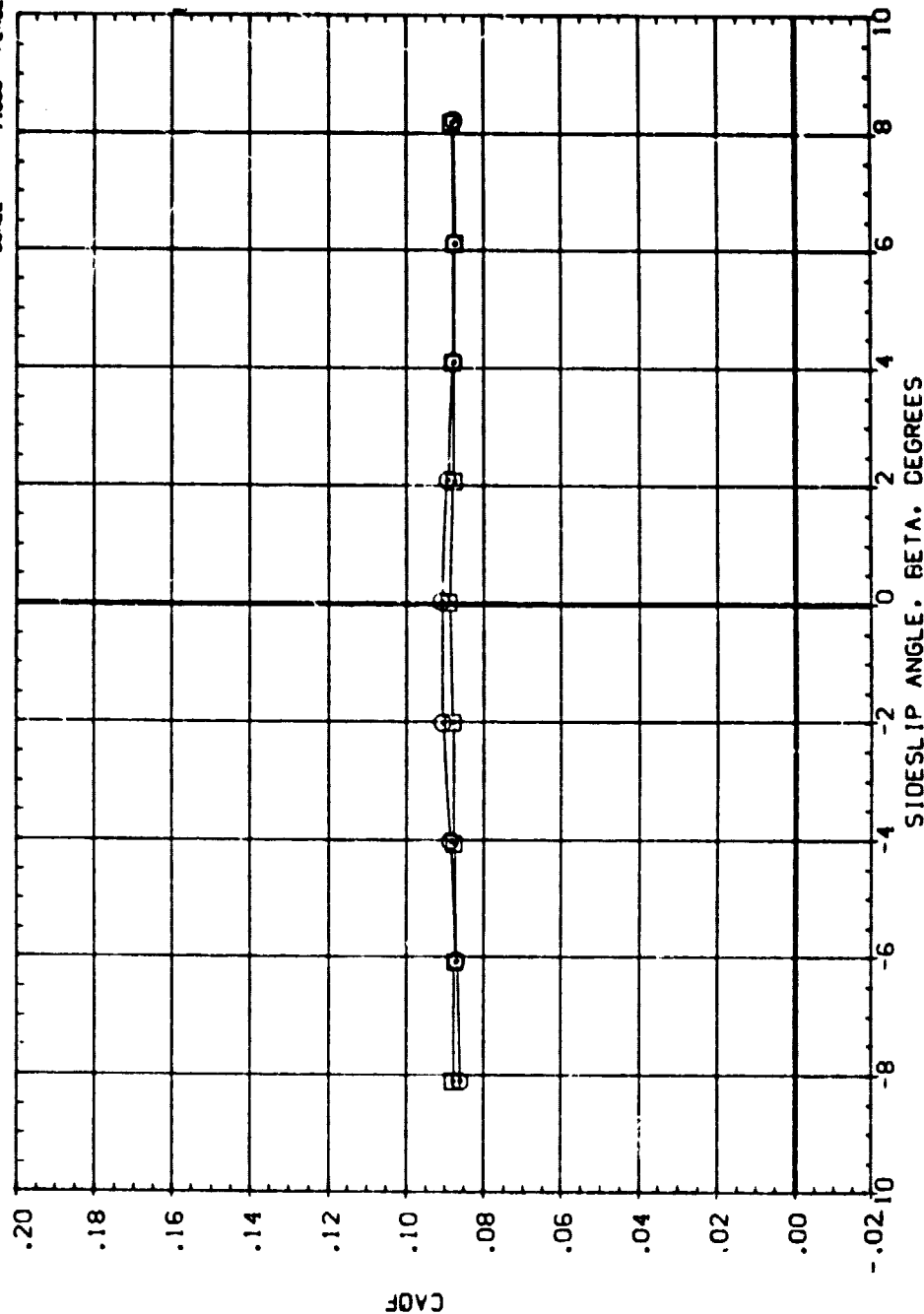


EFFECT OF ET PROTUBERANCES

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2806) \square FA28. MSFC TW 656. CONF. G. CRUIZ. 2000001753
 (FB2809) \square FA28. MSFC TW 656. CONF. G. CRUIZ. 200001753

REFERENCE INFORMATION
 SREF 6.1560 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 RREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

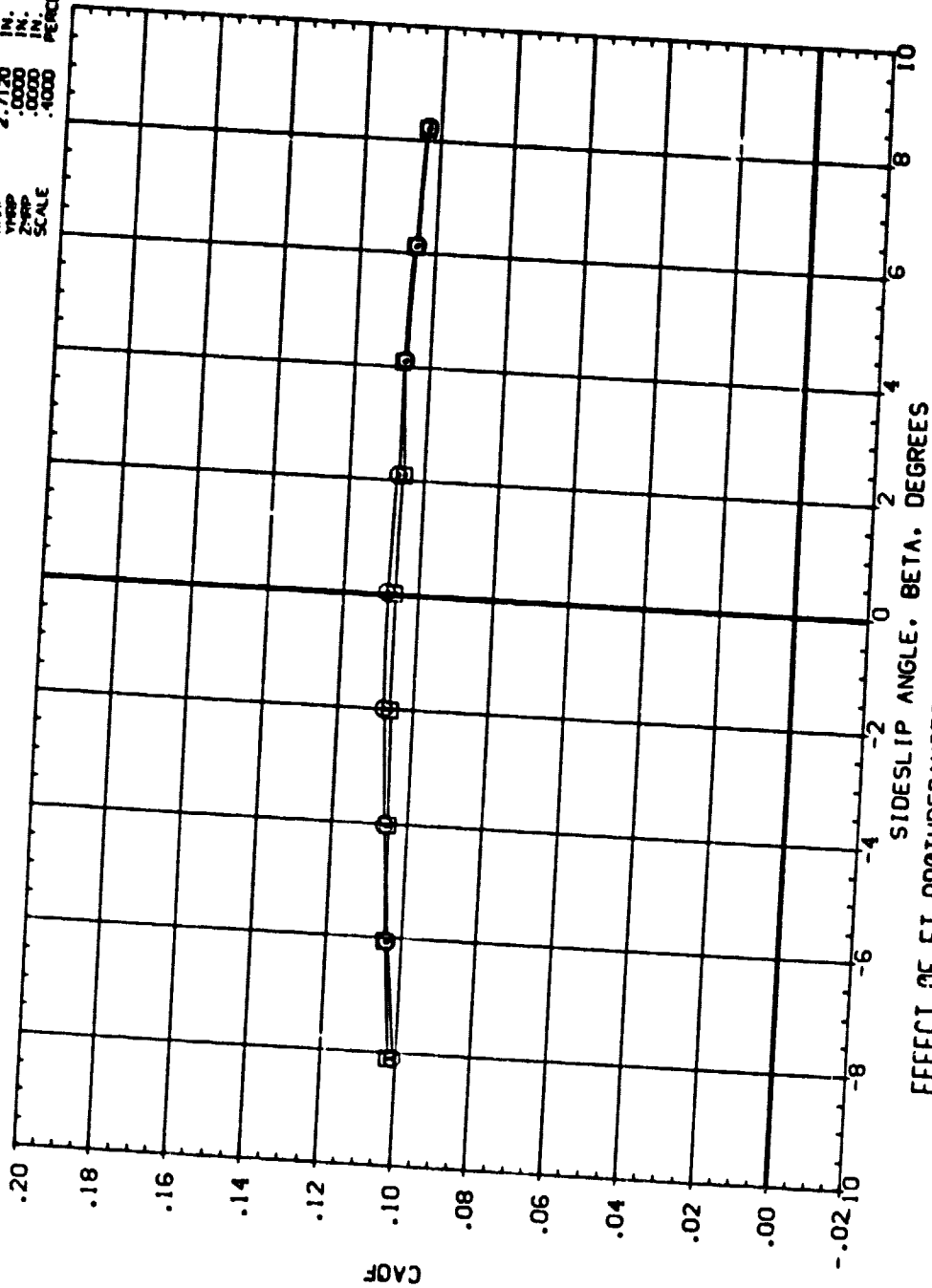


EFFECT OF ET PROTUBERANCES

(O)MACH = 1.10

DATA SET SYMBOL: 8
 (FB2805) (FB2809)
 CONFIGURATION DESCRIPTION:
 FA28. MSFC T4T 656. CONF 1G. QDZE2MVAAT1353
 FA28. MSFC T4T 656. CONF 1G. QDZE2MVAAT1353

REFERENCE INFORMATION
 SREF 6.1360 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 TREF .0000 IN.
 SCALE .4000 PERCENT

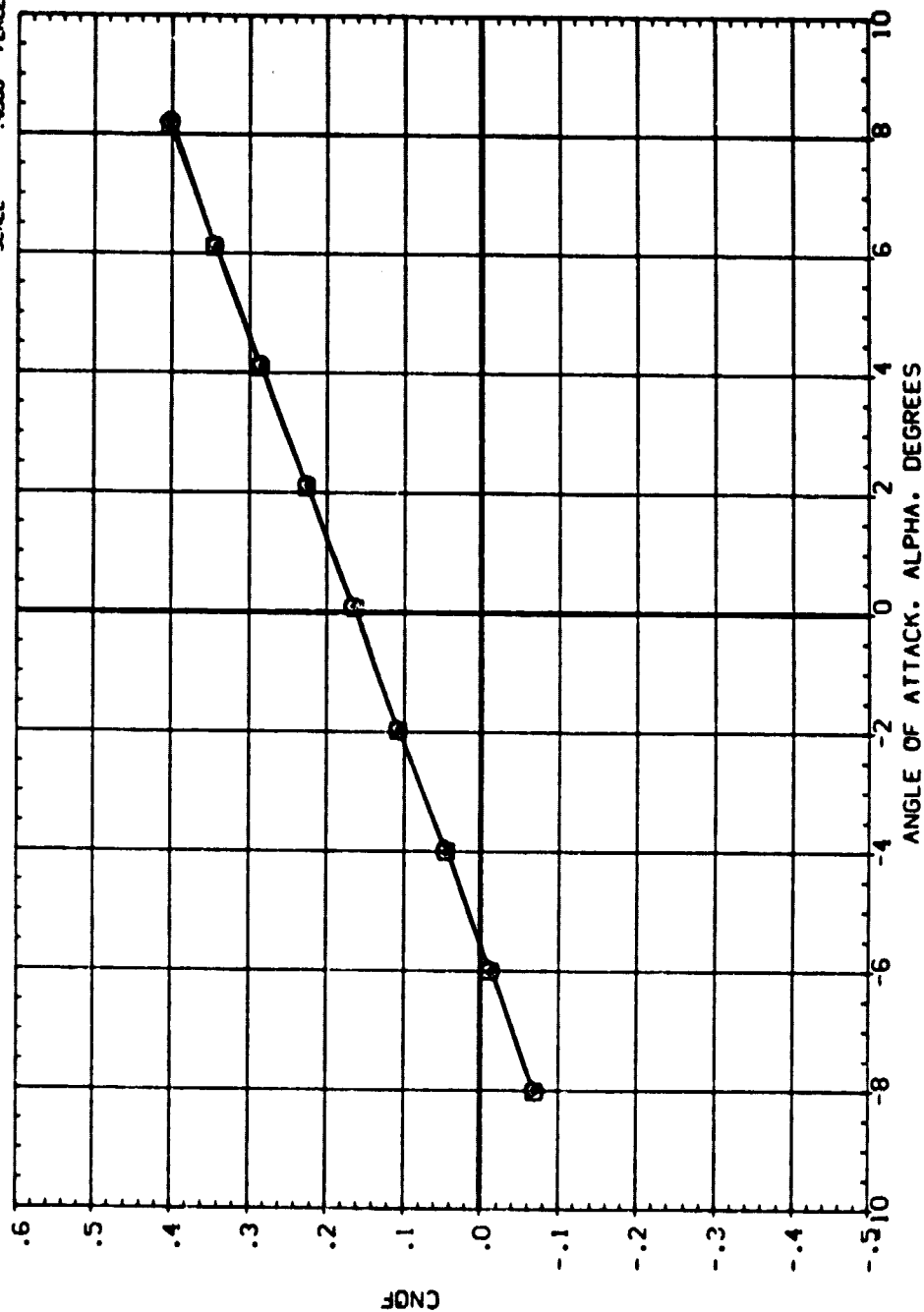


EFFECT OF ET PROTUBERANCES
 (C)MACH = 1.25

DATA SET SYMBOL: (FB2808) (FB2810) (FB2813)

CONFIGURATION DESCRIPTION: FA28. MSFC TWT 656. CONF 1G. DZVZE PMPAA11353
 FA28. MSFC TWT 656. CONF 1G. DZVZE PMPAA11353
 FA28. MSFC TWT 656. CONF 1G. DZVZE PMPAA11353

REFERENCE INFORMATION:
 SREF 5.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YARP 2.7120 IN.
 ZARP .0000 IN.
 SCALE .4000 PERCENT

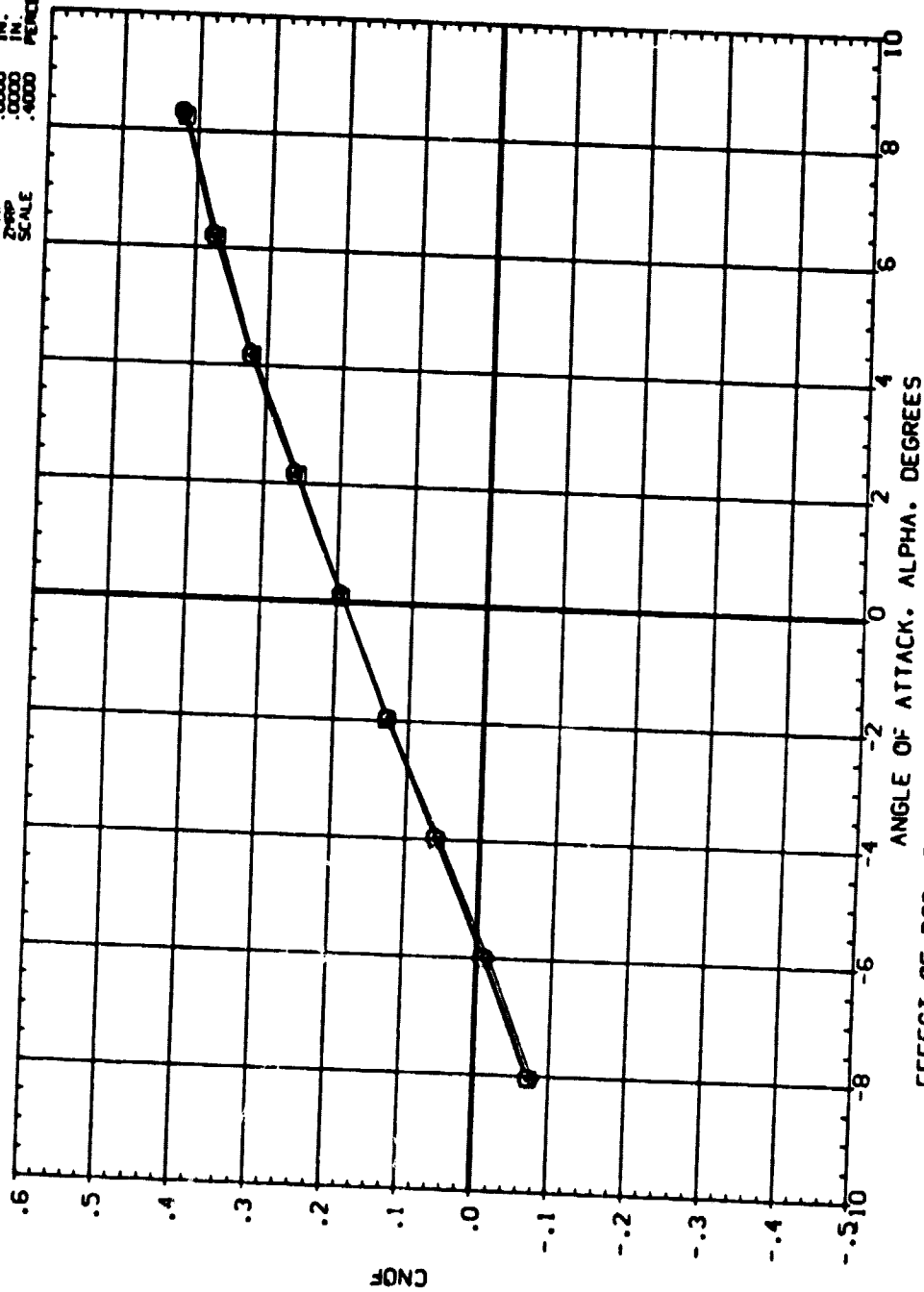


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (FB2808) FA28: MSFC TWT 656: CNF IG. QVZE2MPPAATT353
 (FB2910) FA28: MSFC TWT 656: CNF IG. QVZE2MPPAATT353
 (FB2813) FA28: MSFC TWT 656: CNF IG. QVZE2MPPAATT353

REFERENCE INFORMATION
 SRET 6.1280 50. IN.
 LREF 3.1612 IN.
 BREF 2.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

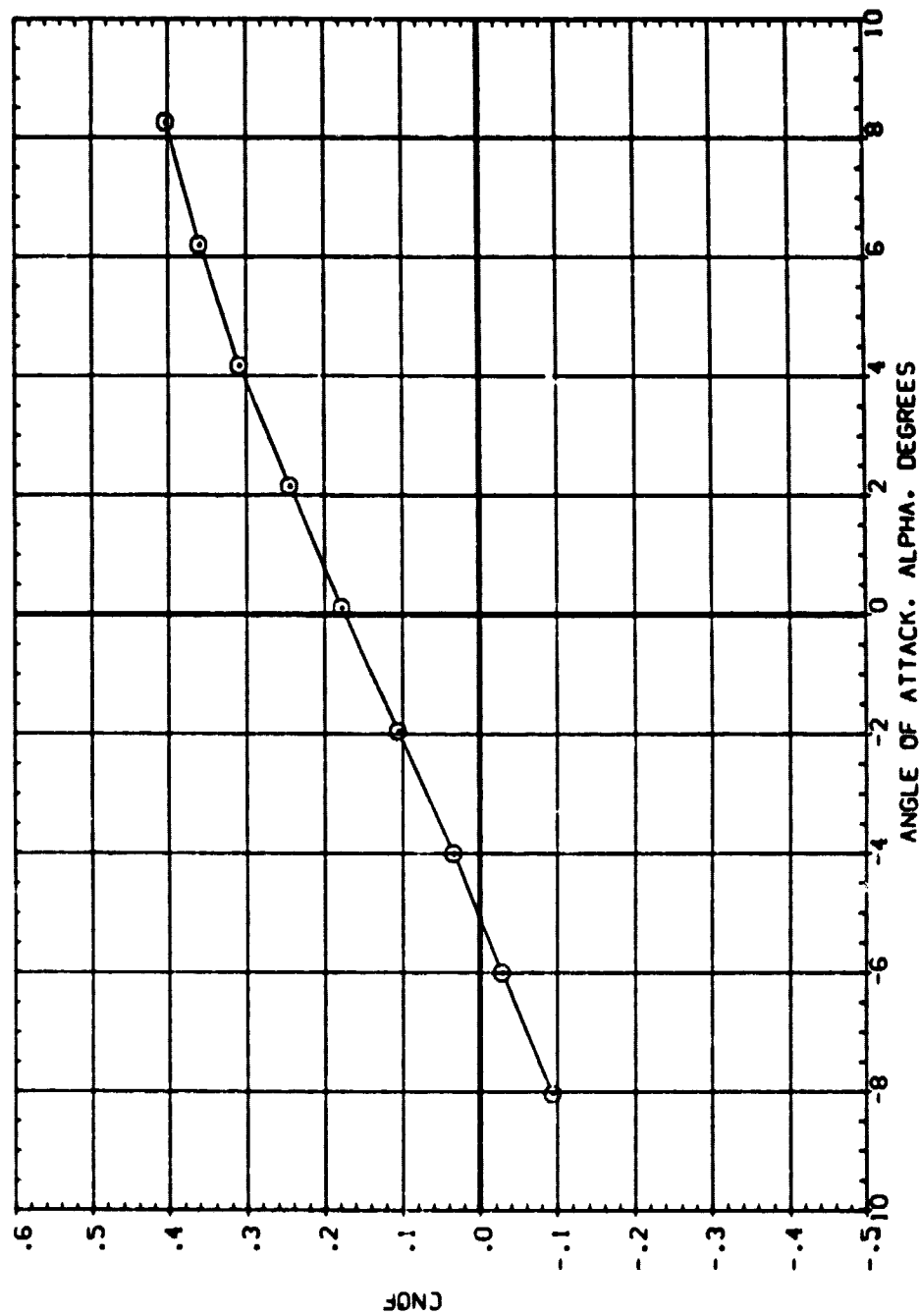


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2808) 8 FA28. MSC TWT 656. CONFIG. 00V2E2PAPAT1353
 (FB2810) DATA NOT AVAILABLE
 (FB2813) DATA NOT AVAILABLE

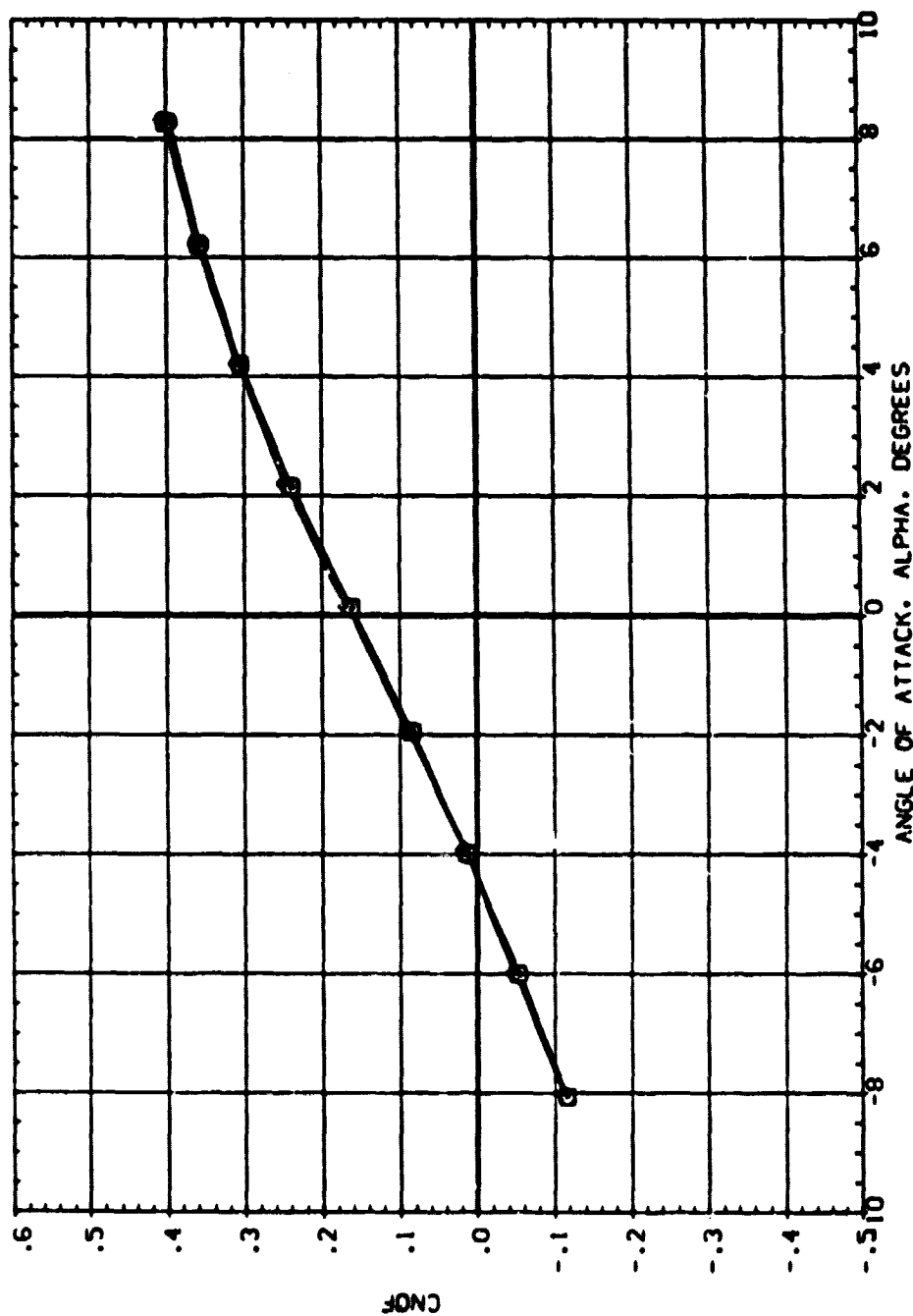
REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF BODY FLAP

(C)MACH = .95

REFERENCE INFORMATION	
SHEET	6.1380
LINE	5.1612
SHEET	3.7470
LINE	2.7120
VALUE	.0000
UNIT	.0000
SCALE	.0000



EFFECT OF BODY FLAP

(D)MACH = 1.05

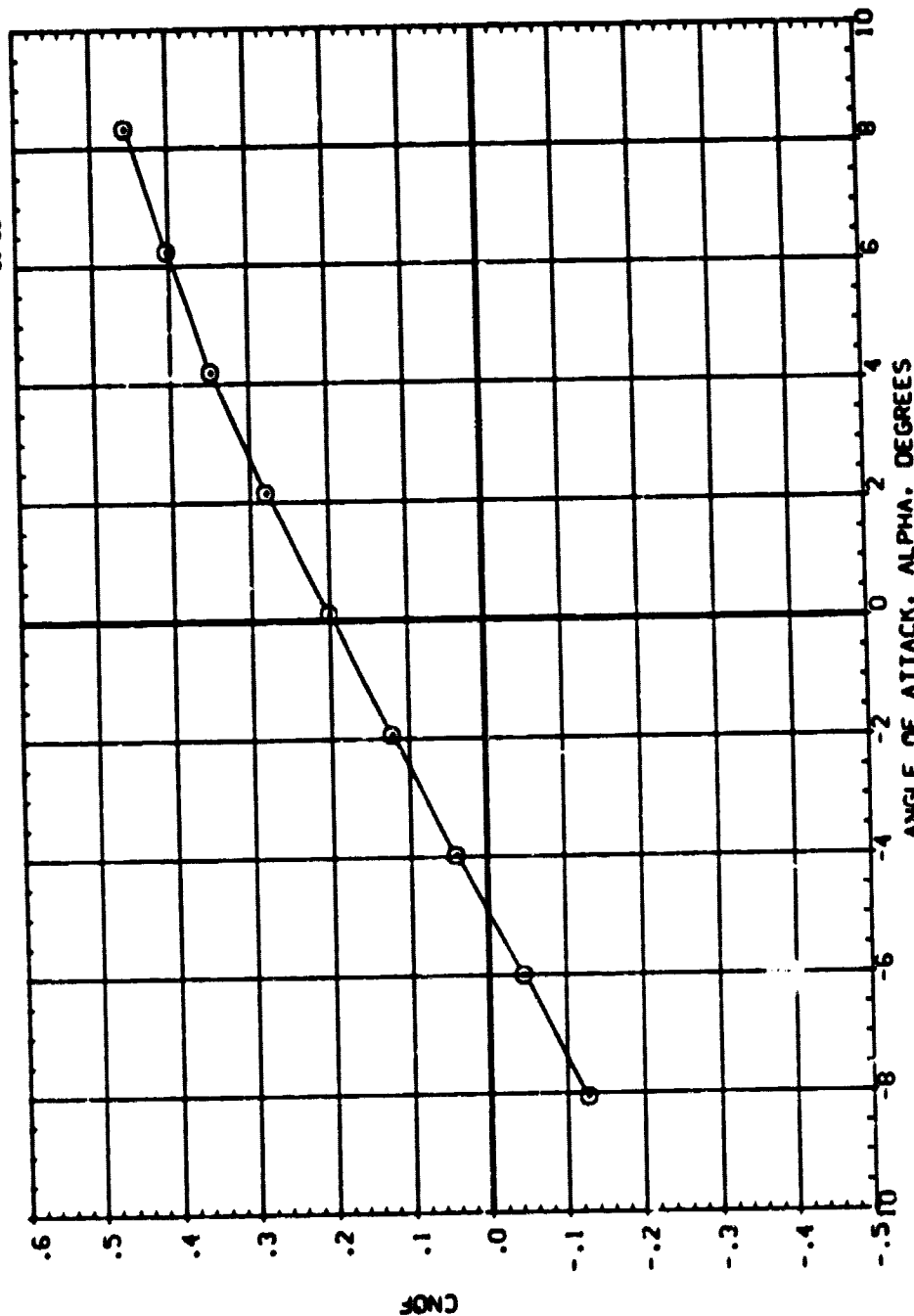
3 SC-3		90.	IN
2760		.0000	PERIOD
2760		.0000	IN.
1980		.0000	IN.
1980		2.7120	IN.
1200		3.7470	IN.
1200		5.1612	IN.
1380		6.1980	IN.



(E)MACH = 1.10

DATA SET SYMBOL: 0102
 CONFIGURATION DESCRIPTION: 0102
 PAGE: 107
 DATA NOT AVAILABLE
 DATA NOT AVAILABLE

REFERENCE INFORMATION
 DATE: 8-1980
 BY: 5-1612
 TITLE: 2-7120
 NUMBER: 0000
 SCALE: 0000 PERCENT

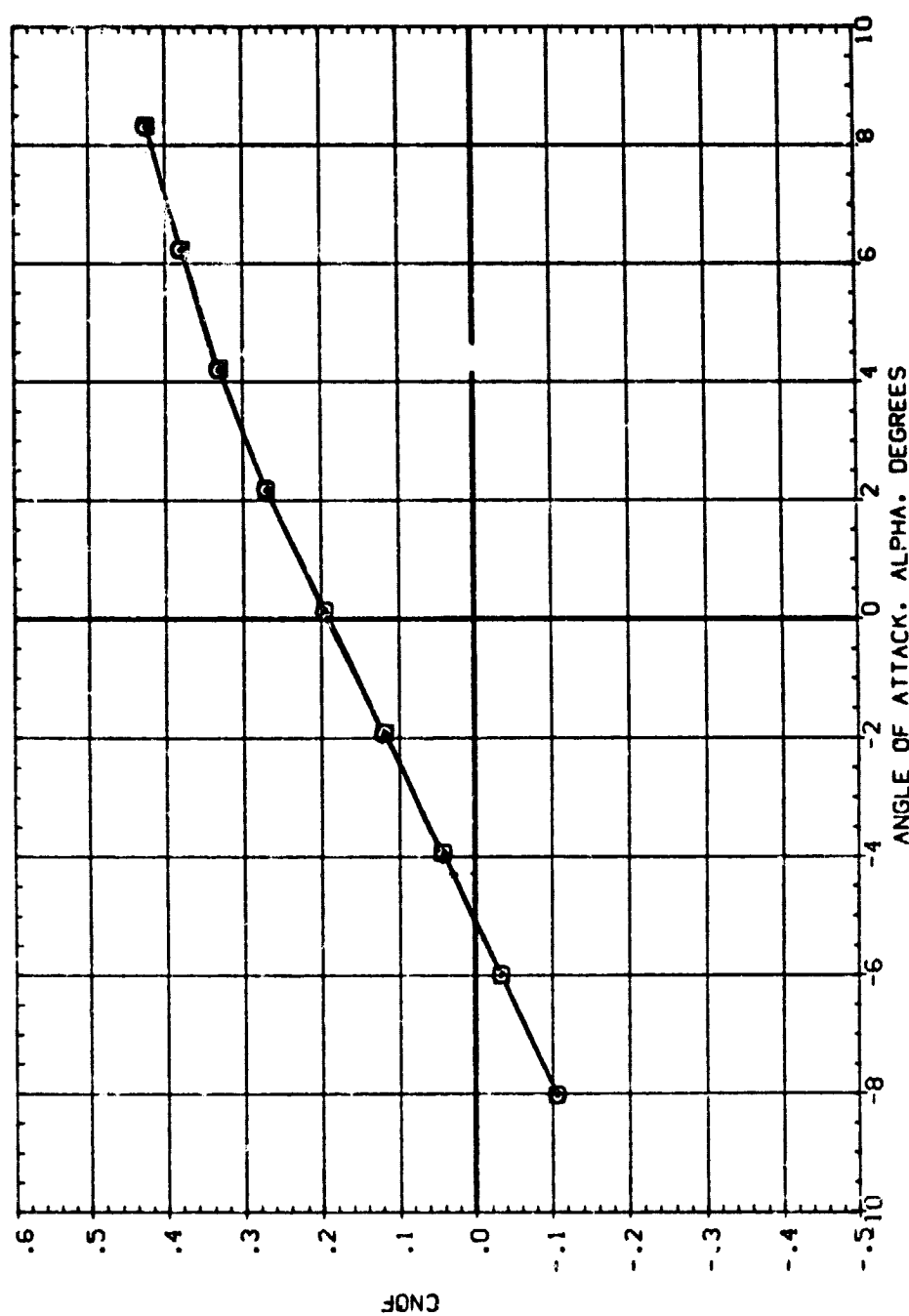


EFFECT OF BODY FLAP

(F)MACH = 1.15

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (F82508) FA28, MSC INT 656, CNF IG, CNFZ PPAATT 353
 (F82510) FA28, MSC INT 656, CNF IG, CNFZ PPAATT 353
 (F82513) FA28, MSC INT 656, CNF IG, CNFZ PPAATT 353

REFERENCE INFORMATION:
 SPEC 6.1880 SQ. IN.
 REF 2.7472 IN.
 REF 2.7472 IN.
 REF 2.7120 IN.
 REF 1.0000 IN.
 REF 2.4000 IN.
 SCALE .4000 PERCENT

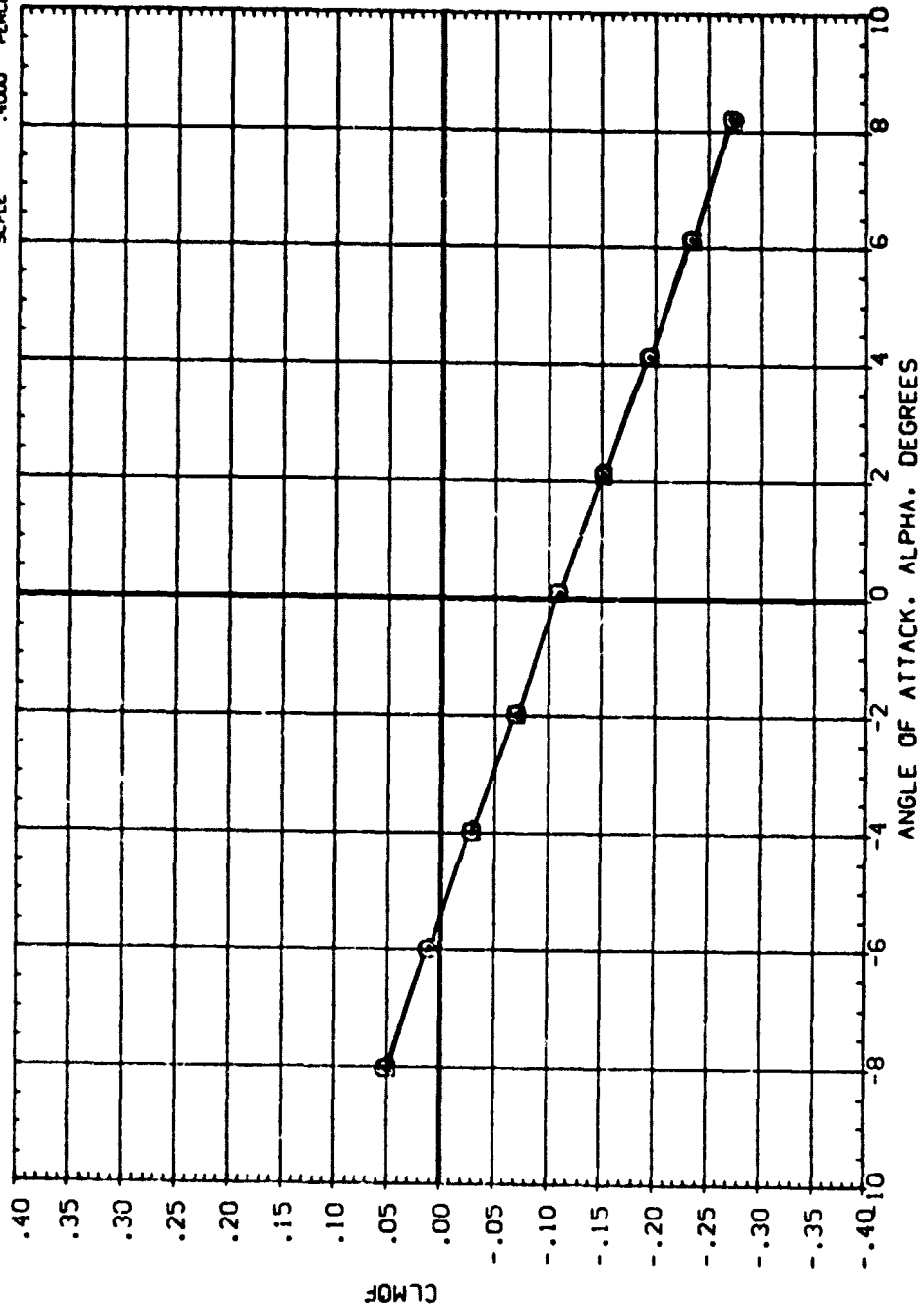


EFFECT OF BODY FLAP

(GMACH = 1.25)

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (FB2808) 02V2E2M0PAATT353
 (FB2810) 02V2E2M0PAATT353
 (FB2813) 02V2E2M0PAATT353

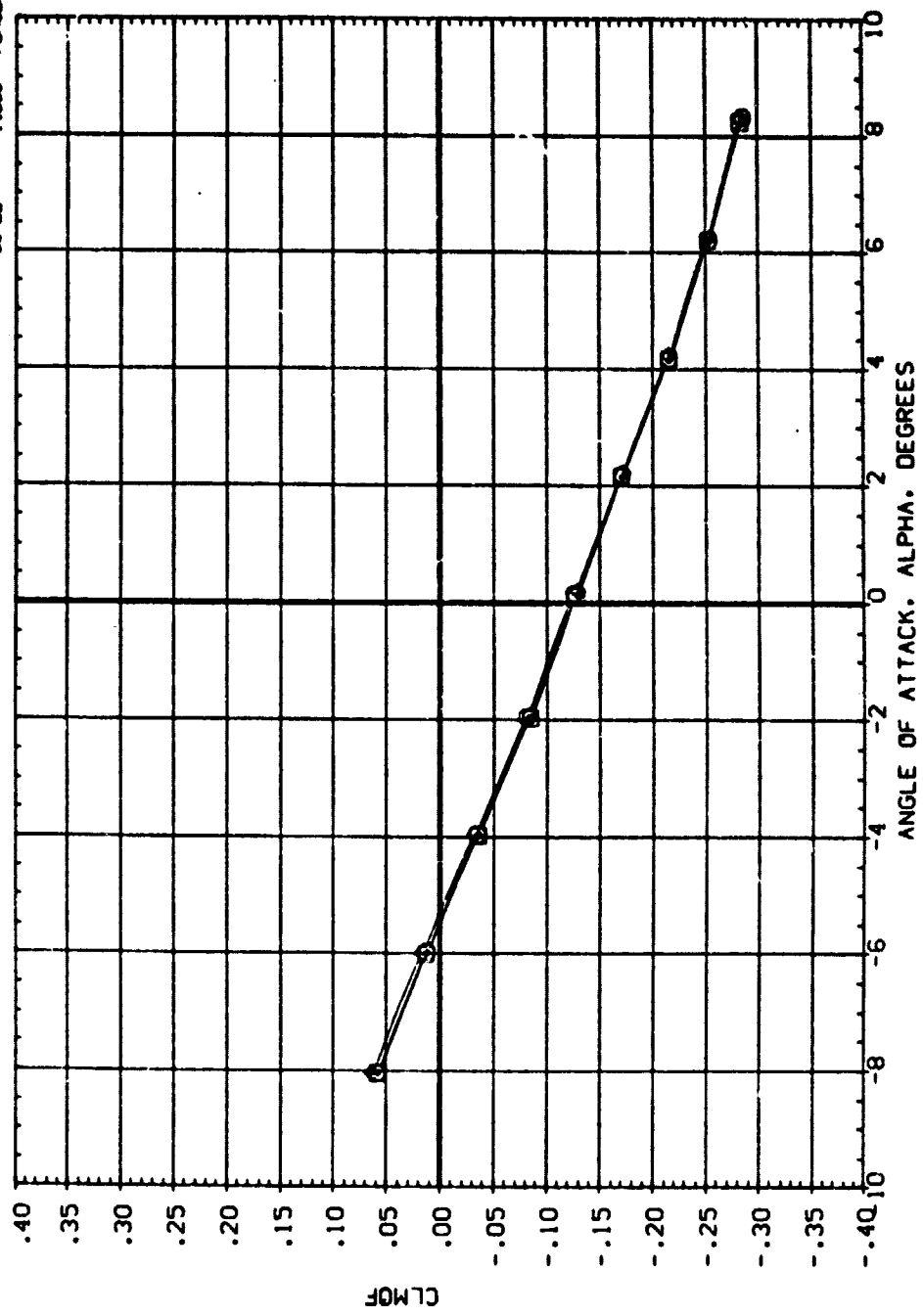
REFERENCE INFORMATION
 SREF 5.1560 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	REFERENCE INFORMATION
(FB2808)	FA28. MSFC TWT 556. CONF 16. 02V2E 20PAA11353	SHEET 6 1980 50. IN
(FB2810)	FA28. MSFC TWT 556. CONF 16. 02V2E 20PAA11353	LINE 6 1612 IN.
(FB2813)	FA28. MSFC TWT 556. CONF 16. 02V2E 20PAA11353	REF 2 7470 IN.
		YREF 2 7120 IN.
		YREF 0.0000 IN.
		ZREF 0.0000 IN.
		SCALE 4000 PERCENT

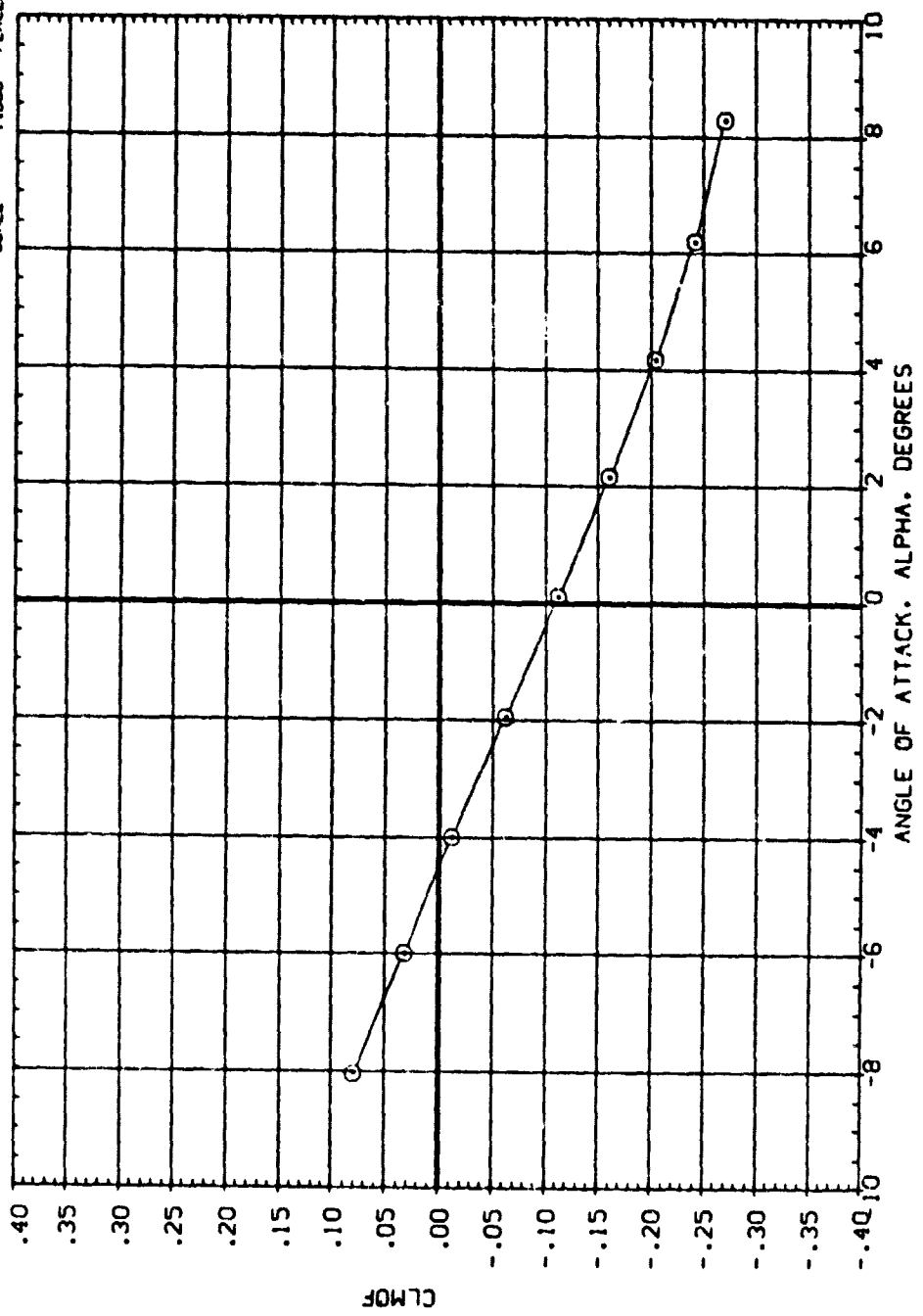


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2808) FA28, NSFC TWT 655, CONFIG. 0202E2PMAATT353
 (FB2810) DATA NOT AVAILABLE
 (FB2813) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

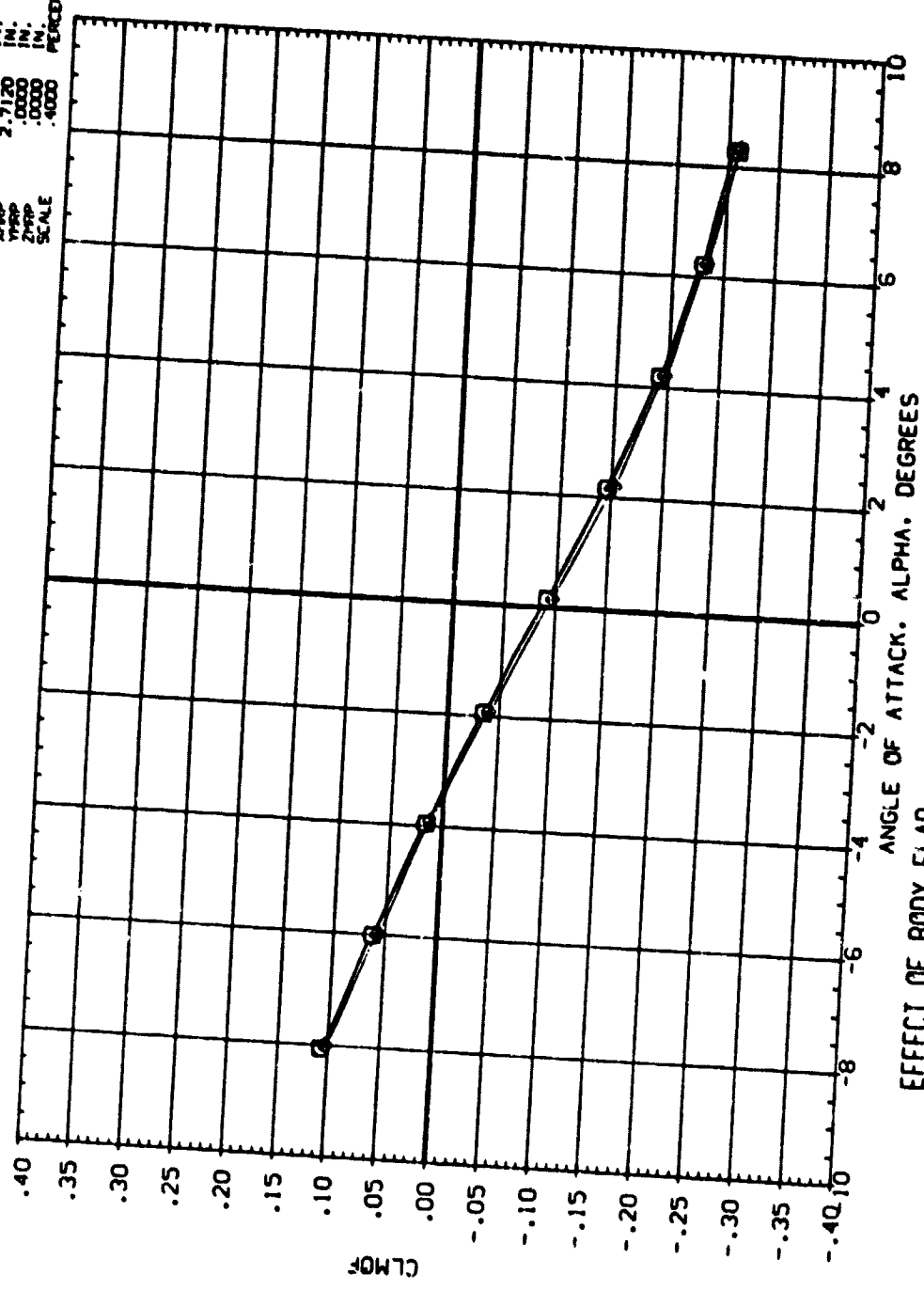


EFFECT OF BODY FLAP

(C)MACH = .95


DATA SET SYMBOL: 00
 (FB2808) FA28. WSC TWT 656. CONF 16. QNZE2PAPAATT353
 (FB2810) FA28. WSC TWT 656. CONF 16. QNZE2PAPAATT353
 (FB2813) FA28. WSC TWT 656. CONF 16. QNZE2PAPAATT353

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1612 IN.
 WREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

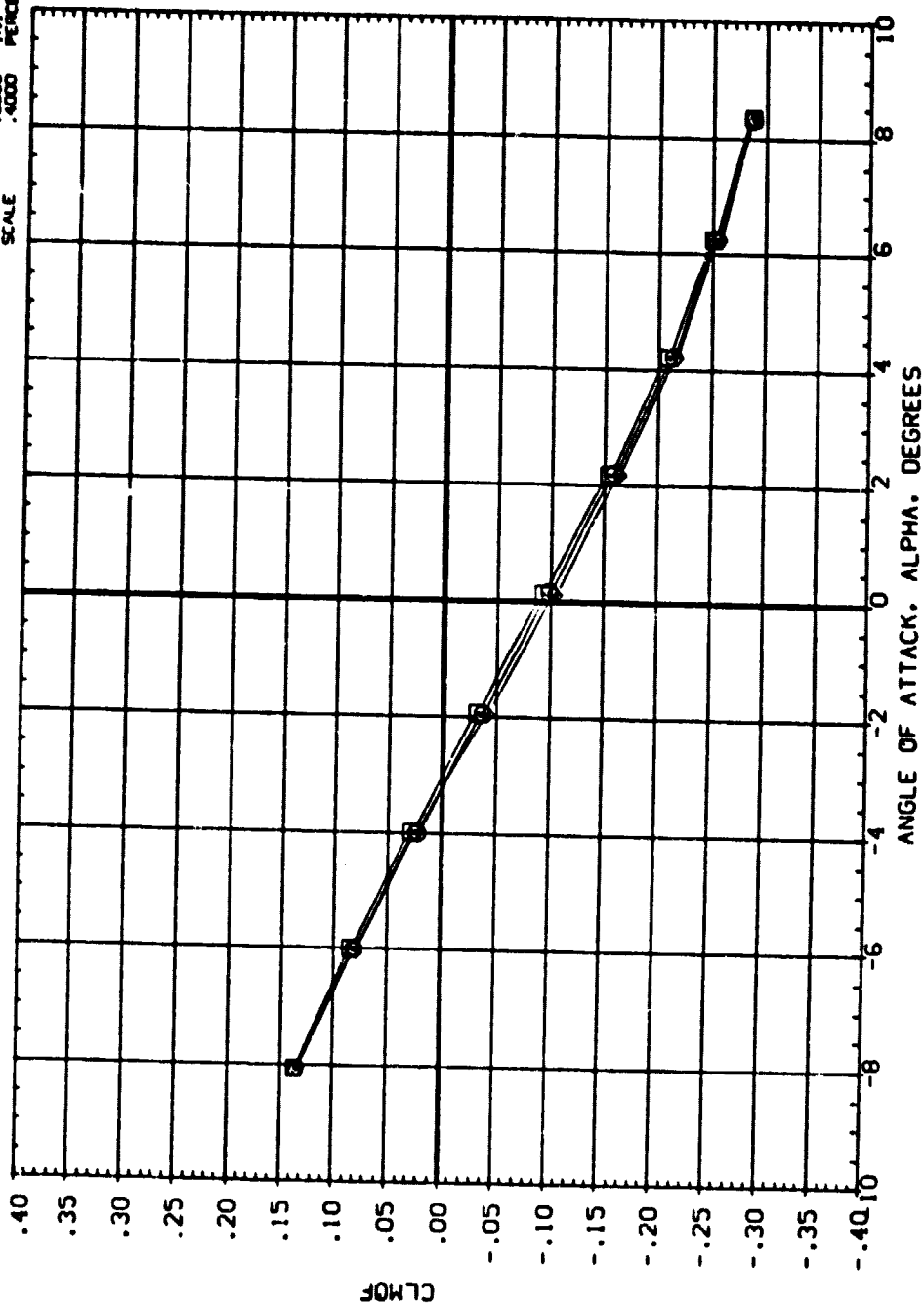


EFFECT OF BODY FLAP

(D)MACH = 1.05

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FR2008) FA28, MSFC TWT 656, CONF 10, QZVZEPAAAT1253
 (FR2010) FA28, MSFC TWT 656, CONF 10, QZVZEPAAAT1253
 (FR2013) FA28, MSFC TWT 656, CONF 10, QZVZEPAAAT1253

REFERENCE INFORMATION:
 SREF 5.1980 50. IN
 LREF 5.1812 50. IN
 MREF 2.7478 50. IN
 XREF 2.7120 50. IN
 YREF .0000 50. IN
 ZREF .0000 50. IN
 SCALE .4000 PERCENT

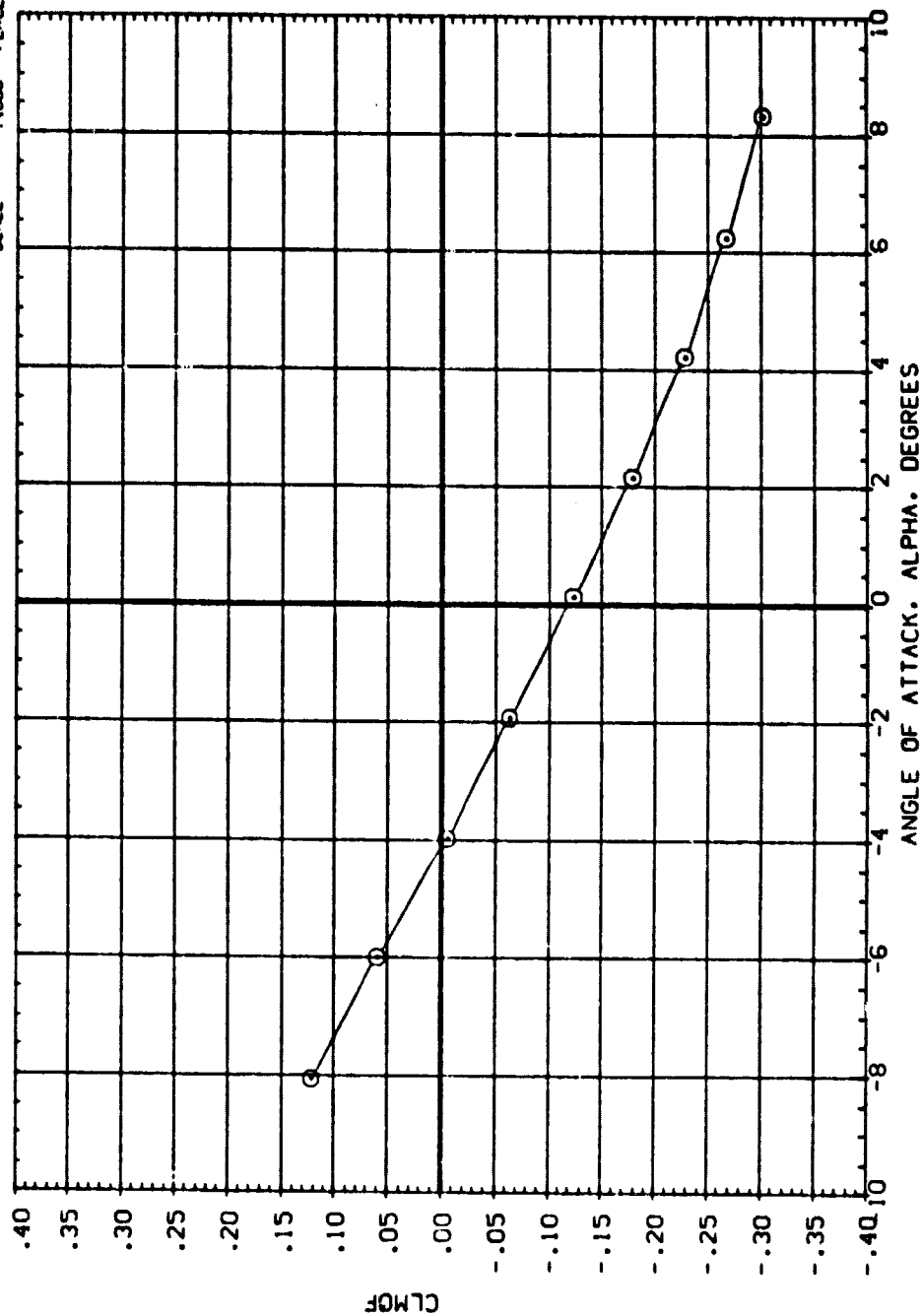


EFFECT OF BODY FLAP

(M)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (F82808) FA28, WSC, TVT 656, CONF 16, 002ZEPAPAATT353
 (F82810) DATA NOT AVAILABLE
 (F82813) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 SO. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

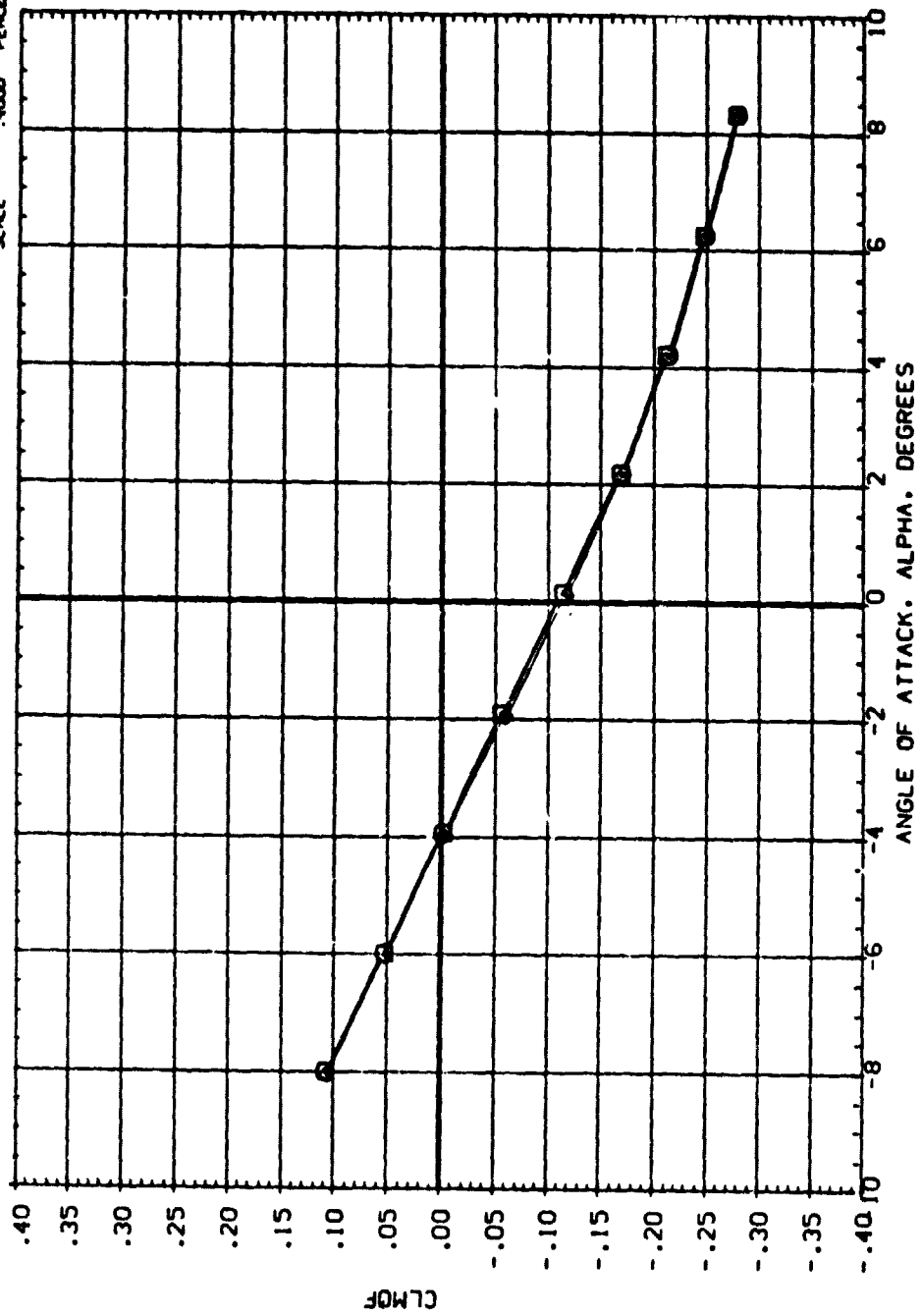


EFFECT OF BODY FLAP

(F)MACH = 1.15

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2808) FA28. MSFC TUT 656. CONFIG. QNZE28PAATT353
 (FB2810) FA28. MSFC TUT 656. CONFIG. QNZE28PAATT353
 (FB2813) FA28. MSFC TUT 656. CONFIG. QNZE28PAATT353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



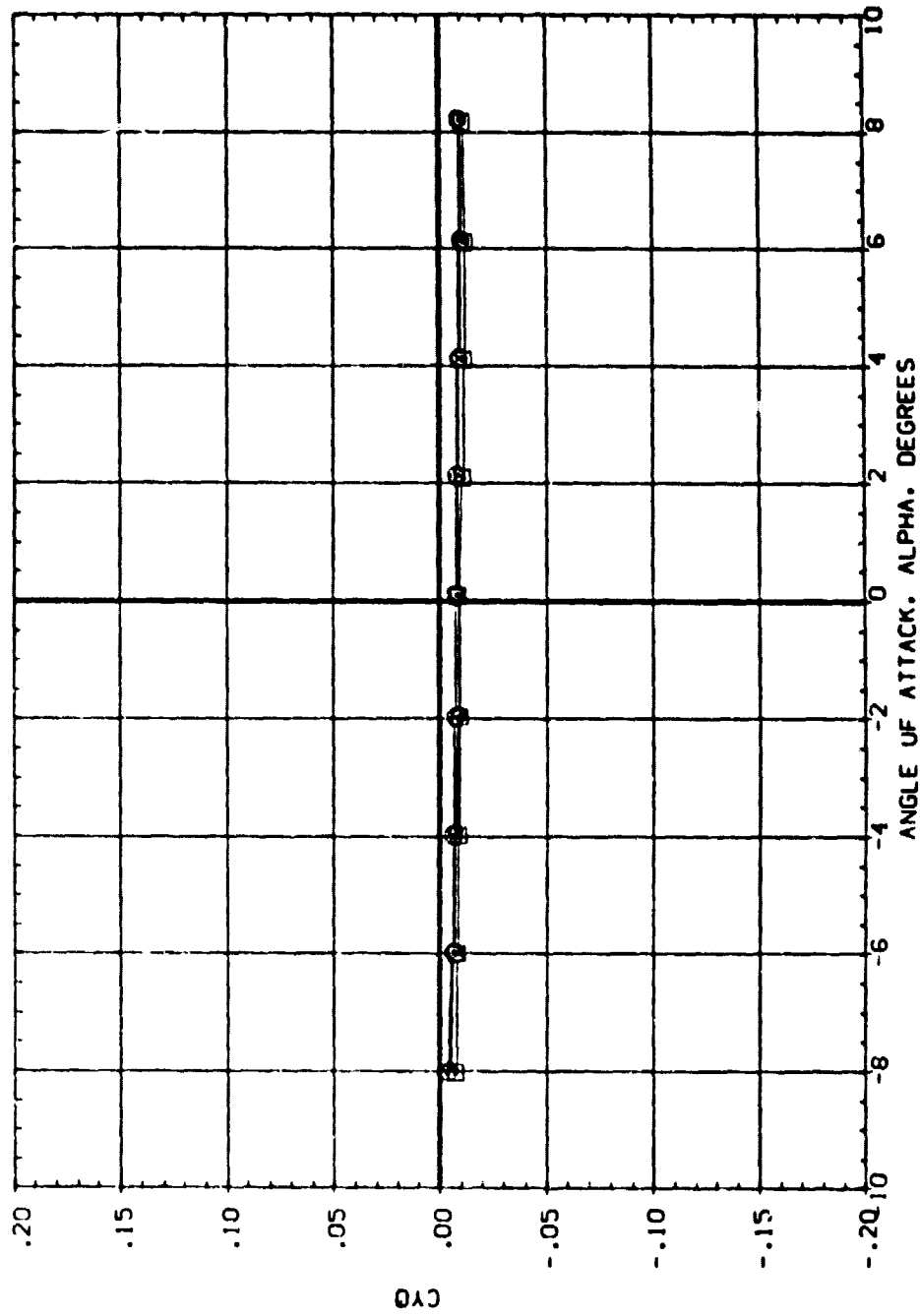
EFFECT OF BODY FLAP

(G)MACH = 1.25

DATA SET SYMBOL: (F8208) (F8209) (F8210) (F8211)

CONFIGURATION DESCRIPTION: FA28. MSFC TWT 656. CONF 15. QNZE ZP-PAATT353
 FA28. MSFC TWT 656. CONF 16. QNZE ZP-PAATT353
 FA28. MSFC TWT 656. CONF 17. QNZE ZP-PAATT353

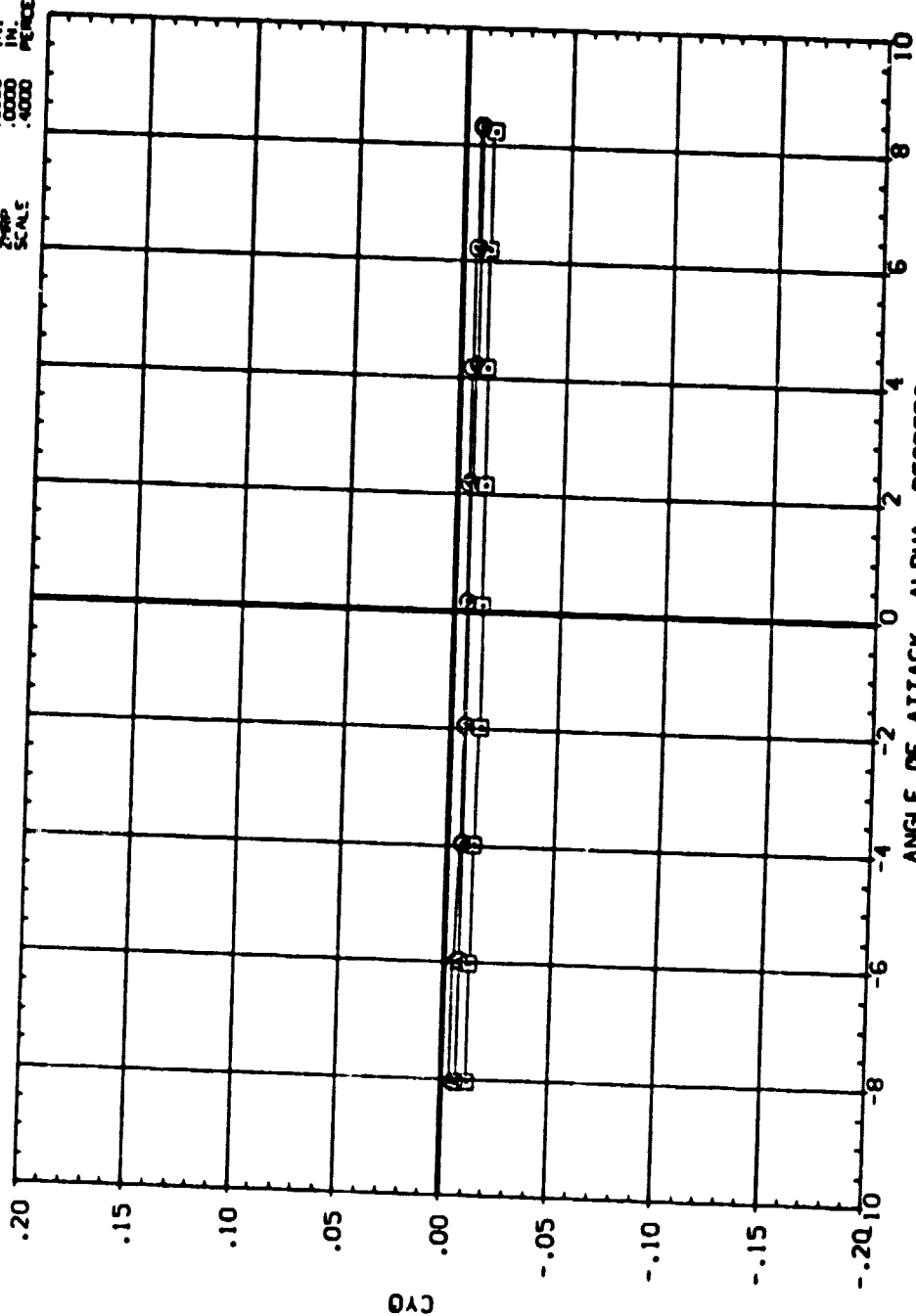
REFERENCE INFORMATION: SREF 6.1980 IN. SD. IN.
 LREF 5.1612 IN.
 SREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



EFFECT OF BODY FLAP
 (A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2808) FA28. MSFC TWT 656. CONF IG. C0NZE2M0PAAT1753
 (FB2810) FA28. MSFC TWT 656. CONF IG. C0NZE2M0PAAT1753
 (FB2813) FA28. MSFC TWT 656. CONF IG. C0NZE2M0PAAT1753

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 MREF 2.7120 IN.
 ZREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

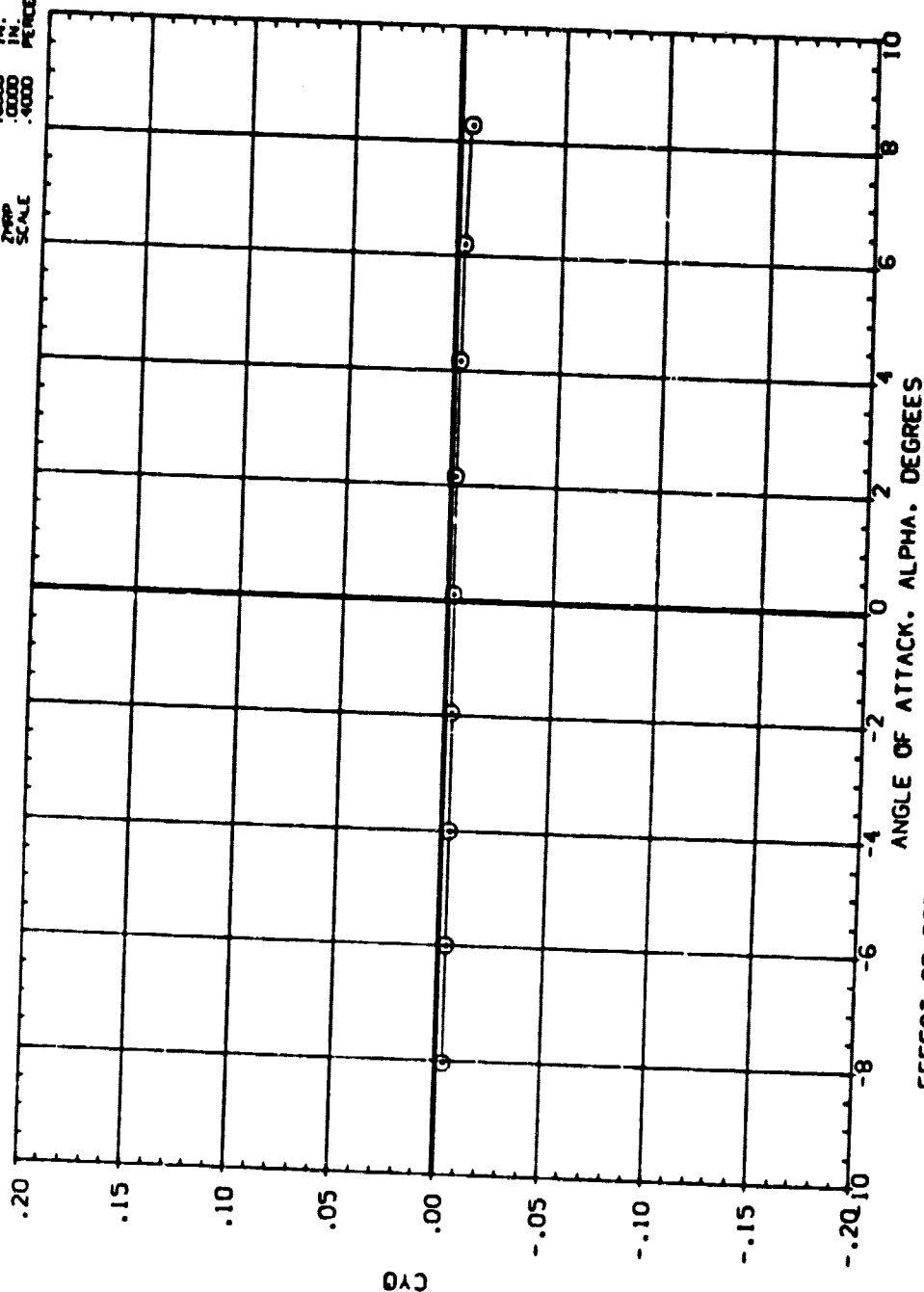


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2008) F208. MSFC TWT 656. CONFIG. 02V2E2M0AATT353
 (FB2010) DATA NOT AVAILABLE
 (FB2013) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 WREF 3.7470 IN.
 VREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



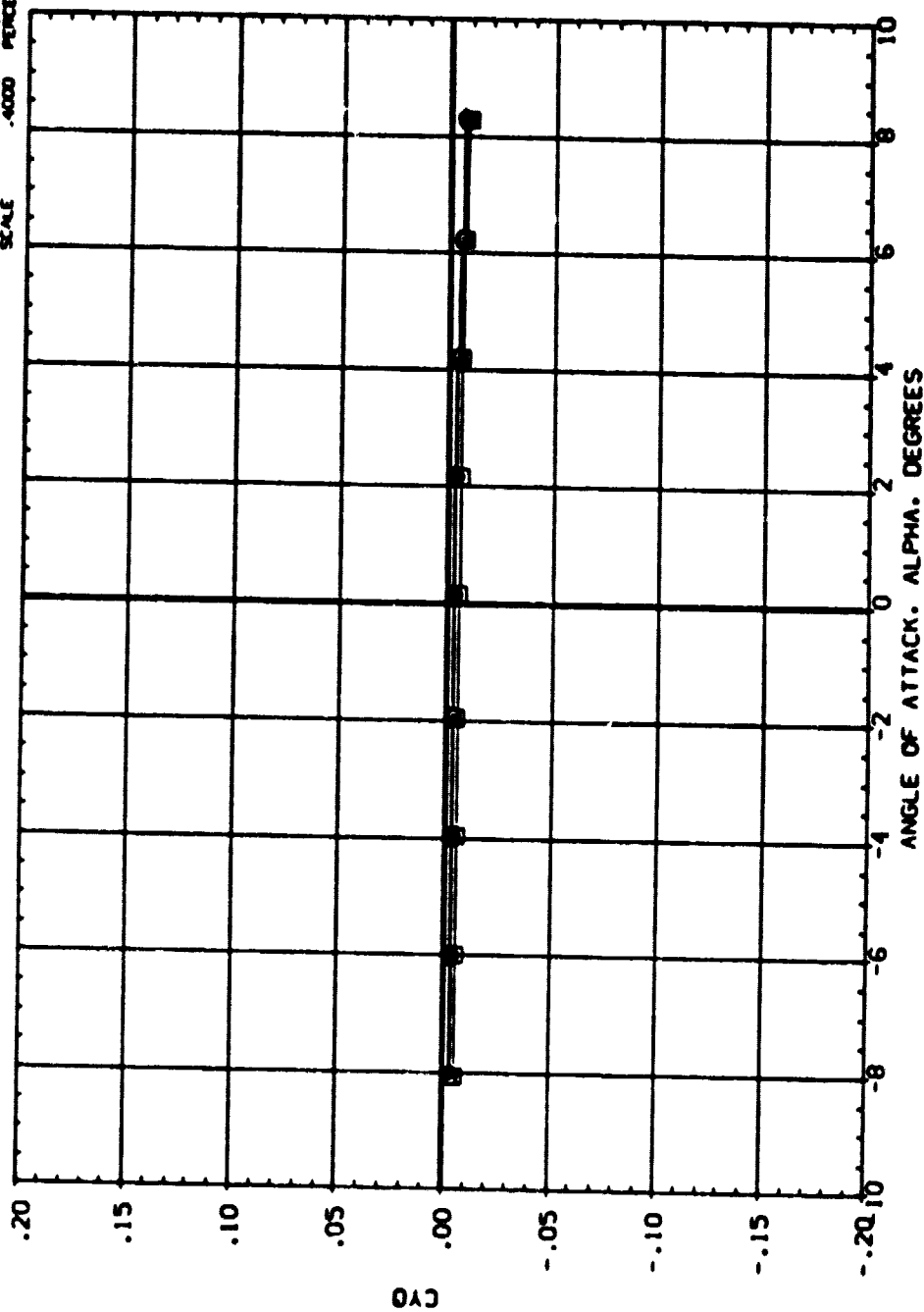
EFFECT OF BODY FLAP

(C)MACH = .95



CONF	LOCATION	DESCRIPTION
FA28.	M5C	TWT 656. COF 16. 02VZE,MP0AAT7353
FA28.	M5C	TWT 656. COF 16. 02VZE,MP0AAT7353
FA28.	M5C	TWT 656. COF 16. 02VZE,MP0AAT7353

REFUGEE INFORMATION	6.1980	58.	IN
LAST	5.1612	IN.	
DATE	3.7470	IN.	
TIME	2.7120	IN.	
YEAR	.0000	IN.	
SCALE	.0000	PERCENT	

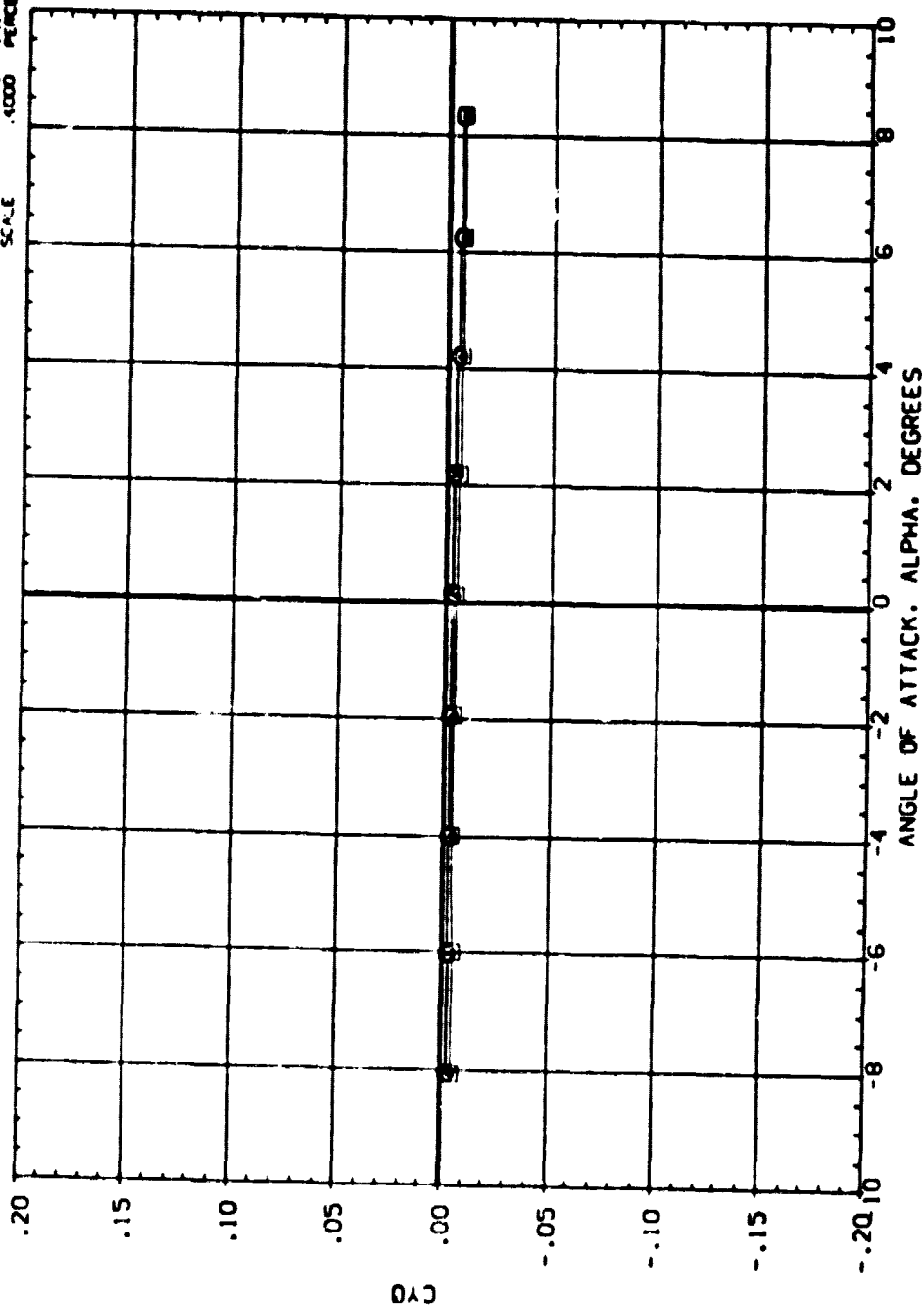


EFFECT OF BODY FLAP

(0)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (18208) FA28. MSC TWT 656. CONF 16. QVZE Z00PAAT1353
 (18209) FA29. MSC TWT 656. CONF 16. QVZE Z00PAAT1353
 (18210) FA28. MSC TWT 656. CONF 16. QVZE Z00PAAT1353

REFERENCE INFORMATION
 SIZE 6.1580 SQ. IN.
 LEAF 5.1612 IN.
 BRCE 3.7470 IN.
 WING 2.7120 IN.
 TAPER .0000 IN.
 SCALE .0000 PERCENT



EFFECT OF BODY FLAP

(C)MACH = 1.10



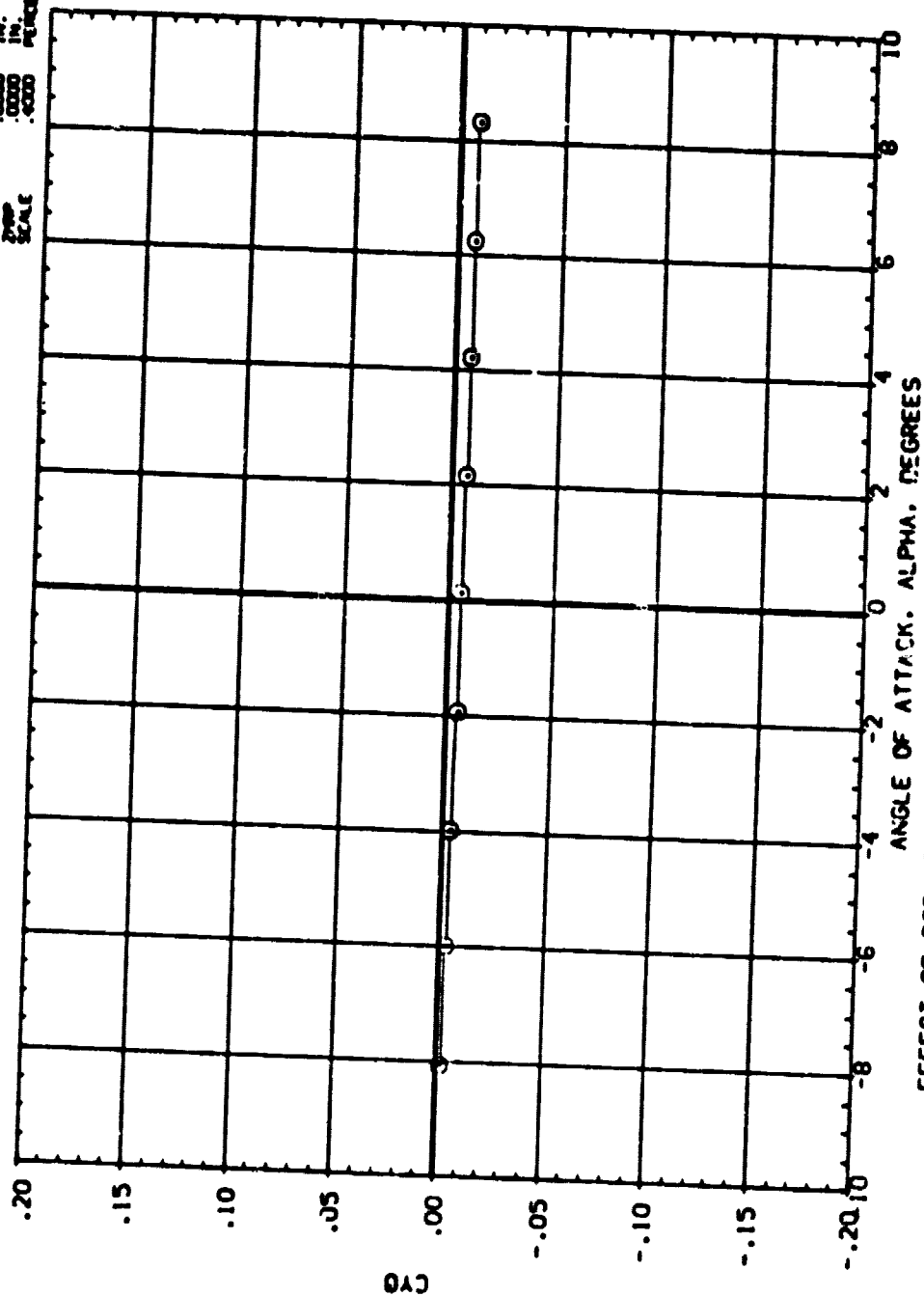
CONFIDENTIAL DESIGNATION

ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED
DATE 08-11-2010 BY 60322
AUTHORITY 50 USC 3024

DATA NOT AVAILABLE
DATA NOT AVAILABLE

DATA NOT AVAILABLE

REFERENCE INFORMATION	
SPR	9.190 IN
LAST	5.1612 IN.
SPR	3.2476 IN.
WTR	2.7120 IN.
WTR	.0000 IN.
WTR	.0000 IN.
SCALE	.0000 PER IN.

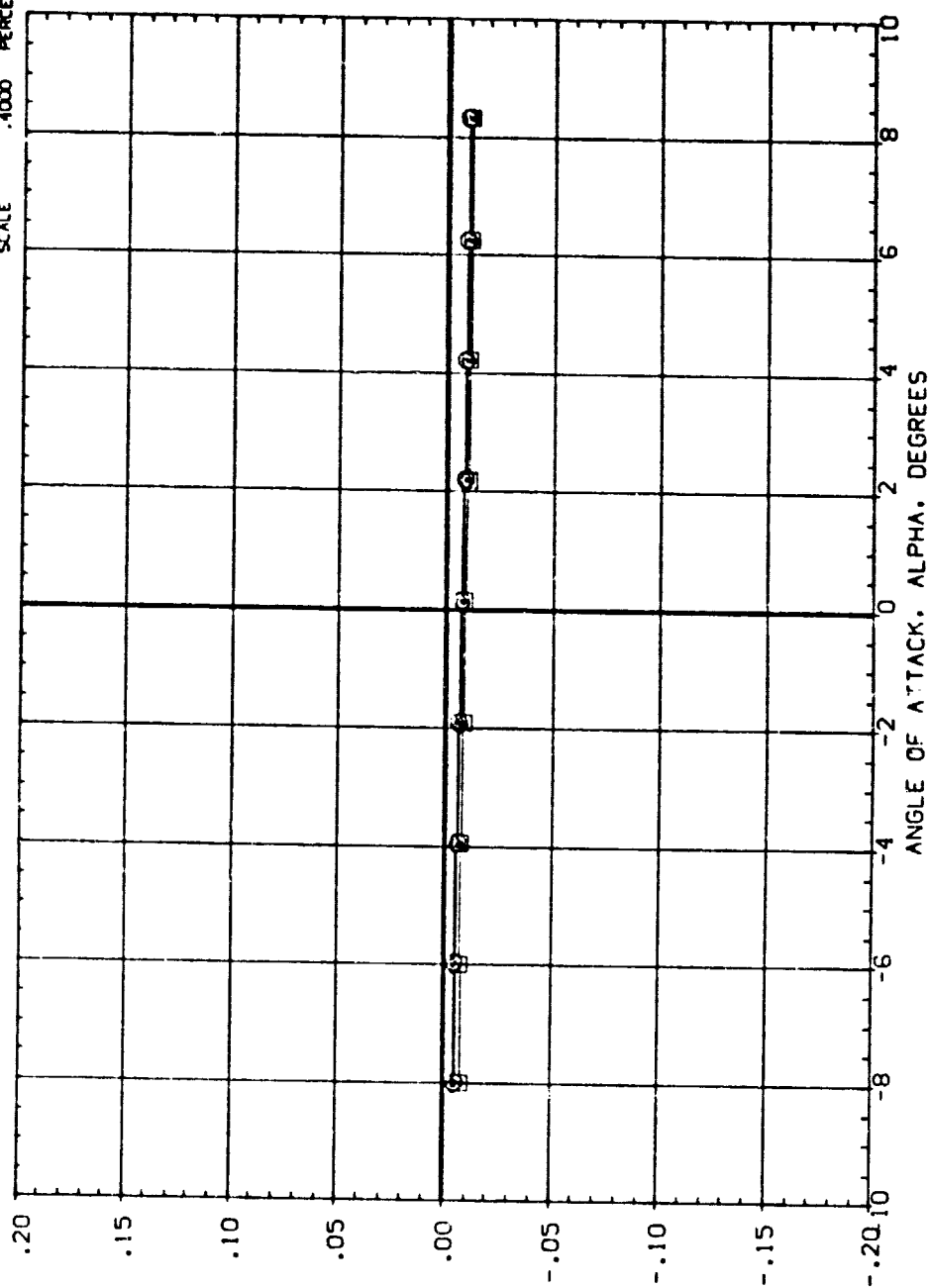


EFFECT OF BODY FLAP

 $(F)_{MACH} = 1.15$

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2808) 8 FA28. MSFC TVT 856. CONF 1G. 02NZE20APAA11353
 (FB2810) 8 FA28. MSFC TVT 856. CONF 1G. 02NZE20APAA11353
 (FB2813) 8 FA28. MSFC TVT 856. CONF 1G. 02NZE20APAA11353

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 XREF .0000 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



EFFECT OF BODY FLAP

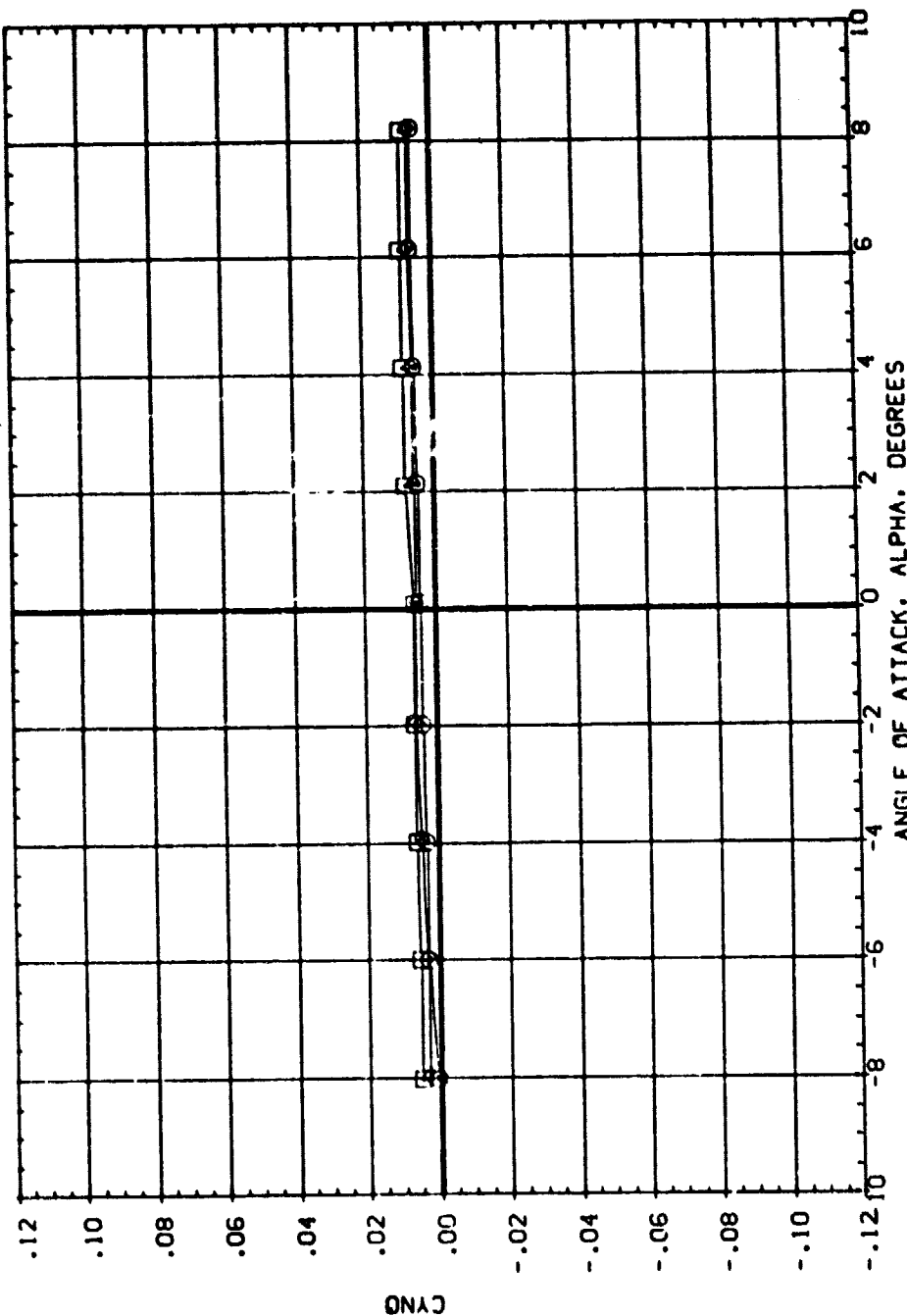
(G)MACH = 1.25

DATA SET SYMBOL: (FB208) (FB209) (FB210) (FB213)

CONFIGURATION DESCRIPTION

FA28. MSFC TWT 656. CONF IG. 02NZE2PMPAATT353
 FA28. MSFC TWT 656. CONF IG. 02NZE2PMPAATT353
 FA28. MSFC TWT 656. CONF IG. 02NZE2PMPAATT353

REFERENCE INFORMATION
 SHEET 6.1880 SQ. IN.
 DATE 6.1812 IN.
 NAME 3.7478 IN.
 WARP 2.7120 IN.
 TEMP .0000 IN.
 SCALE .4000 PERCENT

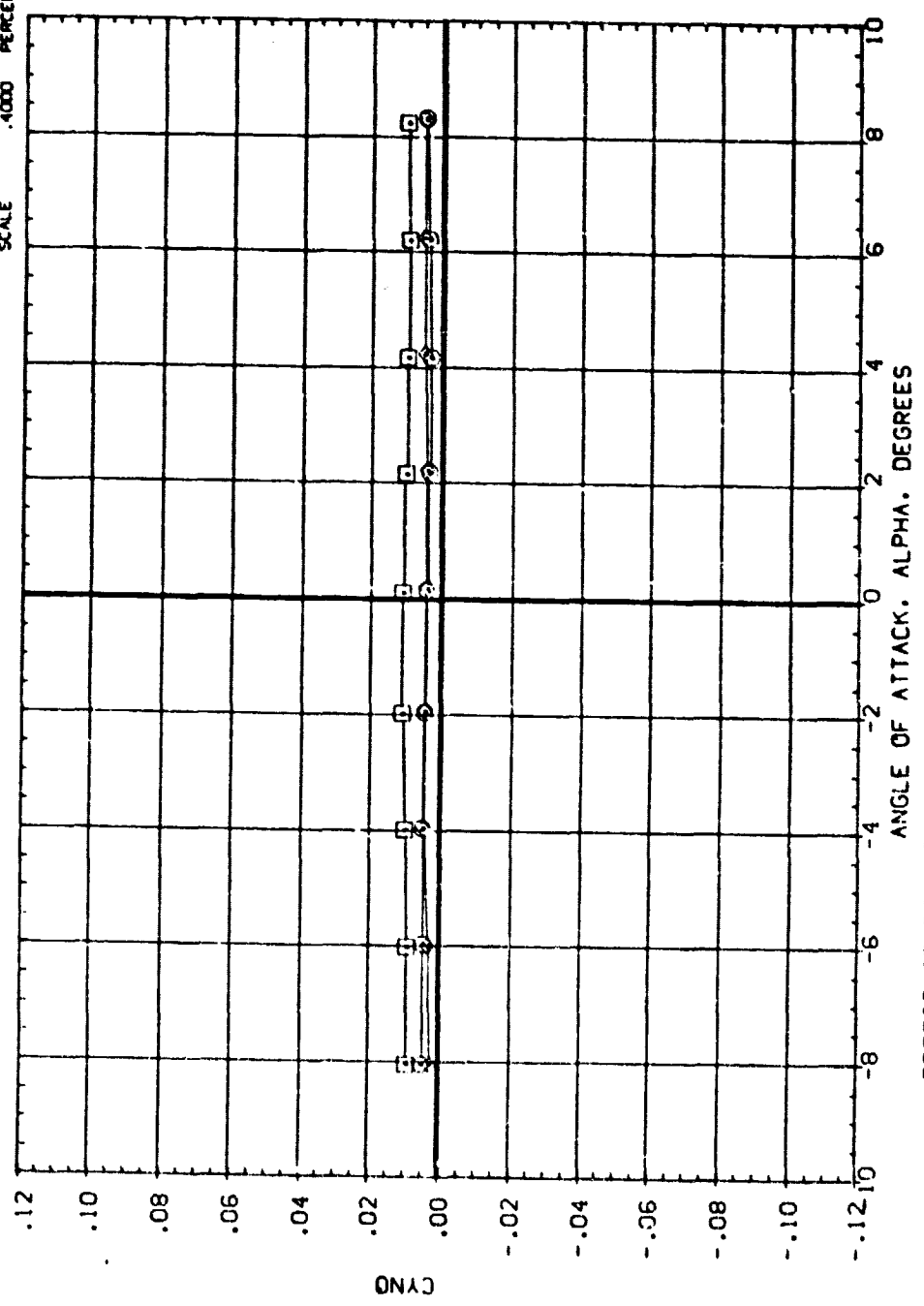


EFFECT OF BODY FLAP

(A)MACH = .60


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB28081) 0 FAZ8. M5C 1M1 656. CONF 10. 02NZE 02PAAT1253
 (FB28101) 0 FAZ8. M5C 1M1 656. CONF 10. 02NZE 02PAAT1253
 (FB28131) 0 FAZ8. M5C 1M1 656. CONF 10. 02NZE 02PAAT1253

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

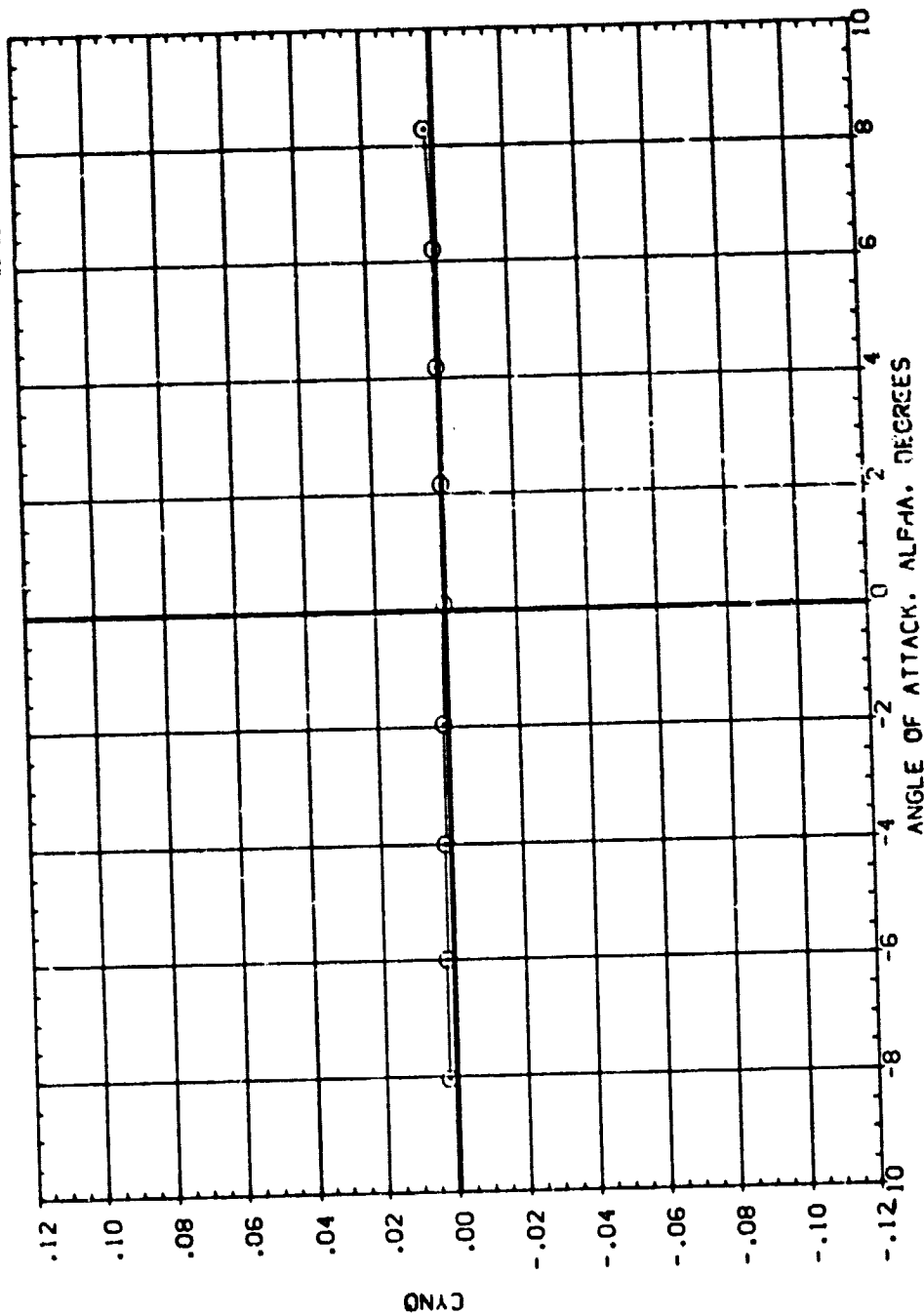


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION: FA28, MSFC, TVT 656, CONF 1G, 02V2E29A1A17353
 (FB2808) DATA NOT AVAILABLE
 (FB2810) DATA NOT AVAILABLE
 (FB2813)

REFERENCE INFORMATION
 QREF 5.1980 SQ. IN.
 LREF 5.1612 IN.
 SREF 3.7470 IN.
 WREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

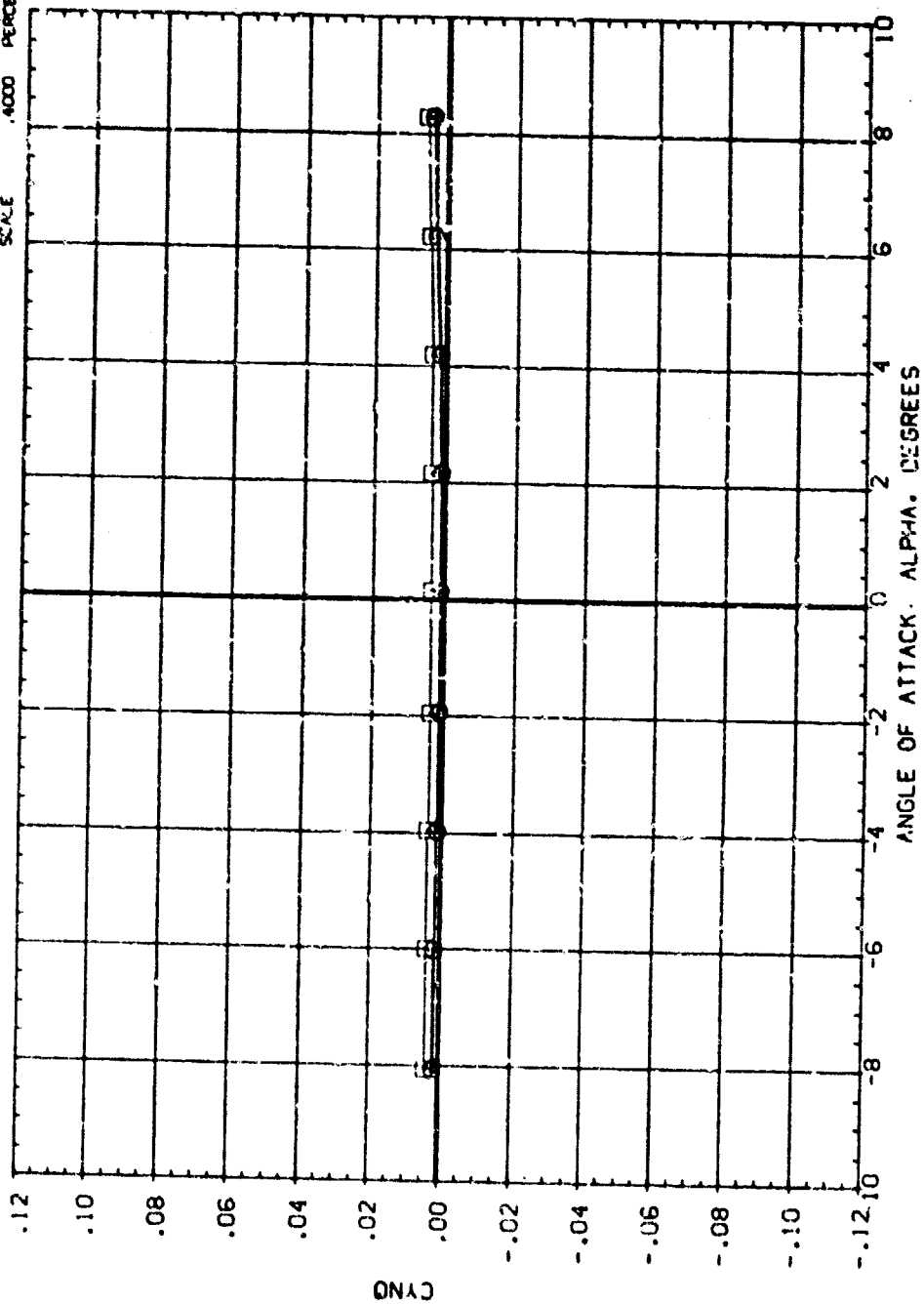


EFFECT OF BODY FLAP

(C)MACH = .95

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (F82808) 0 FA28. MSFC TVT 656. CONF 10. 02NZE 20NPAATT353
 (F82810) 0 FA28. MSFC TVT 656. CONF 10. 02NZE 20NPAATT353
 (F82813) 0 FA28. MSFC TVT 656. CONF 10. 02NZE 20NPAATT353

REFERENCE INFORMATION
 SPRT 6.1580 SO. IN
 LPT 5.1612 IN.
 WLP 3.7470 IN.
 WOP 2.7120 IN.
 ZWOP .0000 IN.
 ZWOP .0000 IN.
 SCALE .4000 PERCENT

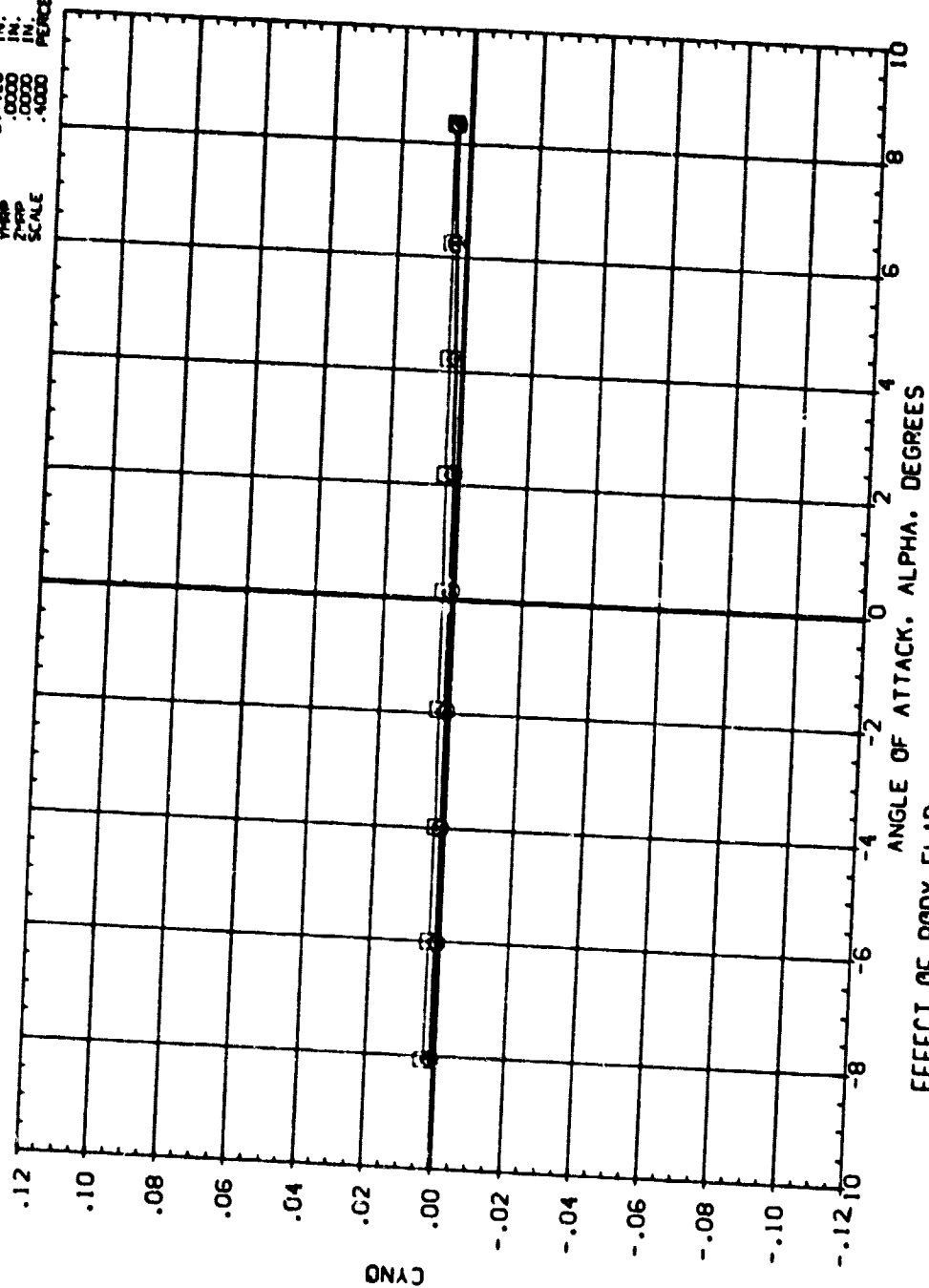


EFFECT OF BODY FLAP

(D)MACH = 1.05


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (F82808) 000 FA28. MSFC TWT 656. CONF 10. OZVZ 2MPPA11353
 (F82810) 000 FA28. MSFC TWT 656. CONF 10. OZVZ 2MPPA11353
 (F82813) 000 FA28. MSFC TWT 656. CONF 10. OZVZ 2MPPA11353

REFERENCE INFORMATION
 SREF 6.1880 50. IN
 LREF 5.1612 IN.
 XREF 2.7470 IN.
 YREF .7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERIOD

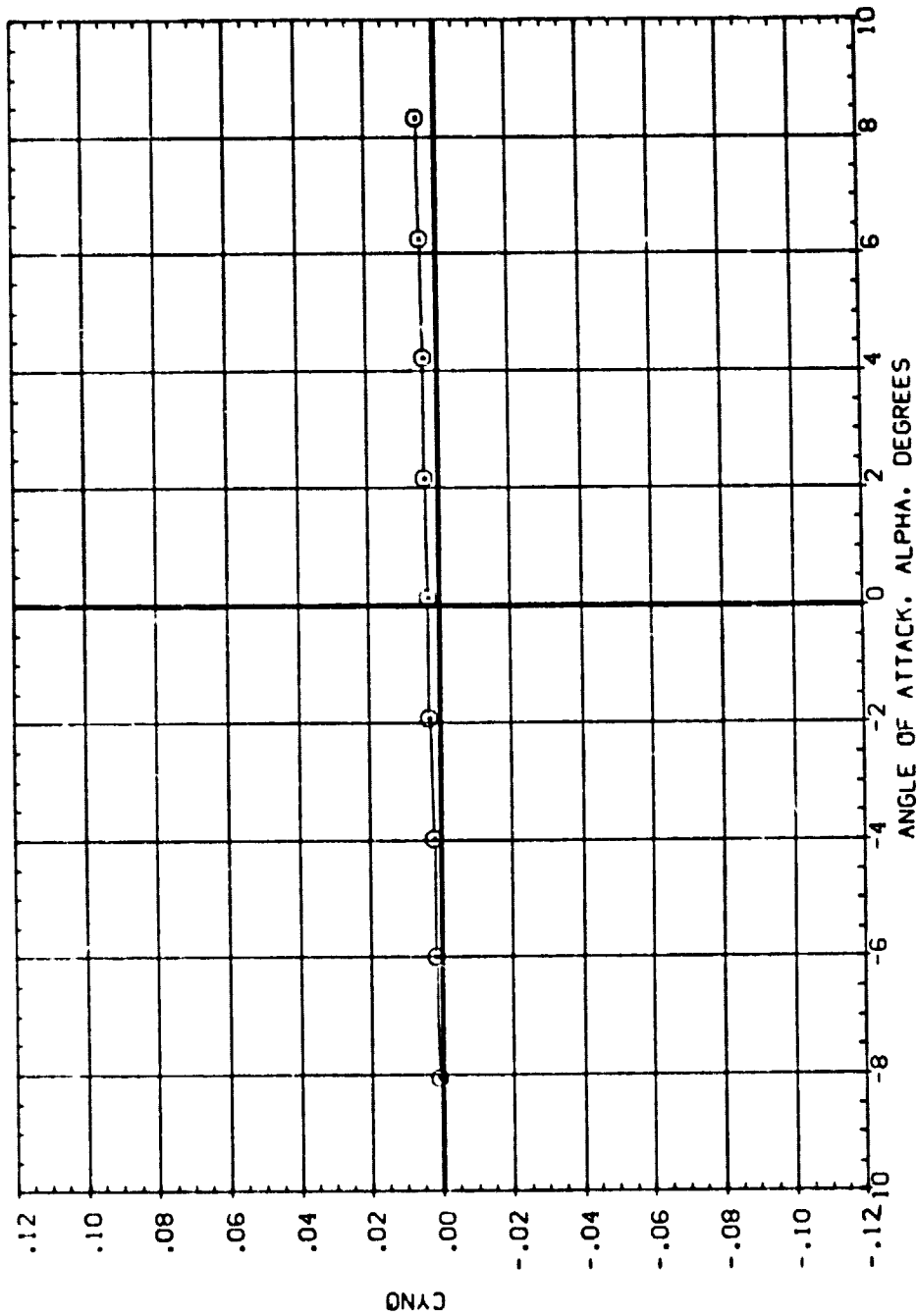


EFFECT OF BODY FLAP

(E)MACH = 1.10

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION: FA28, MSFC, VT, 656, CONFIG. 02V2E2MFAATT353
 (FB2808) DATA NOT AVAILABLE
 (FB2810) DATA NOT AVAILABLE
 (FB2813) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .4000 PERCENT

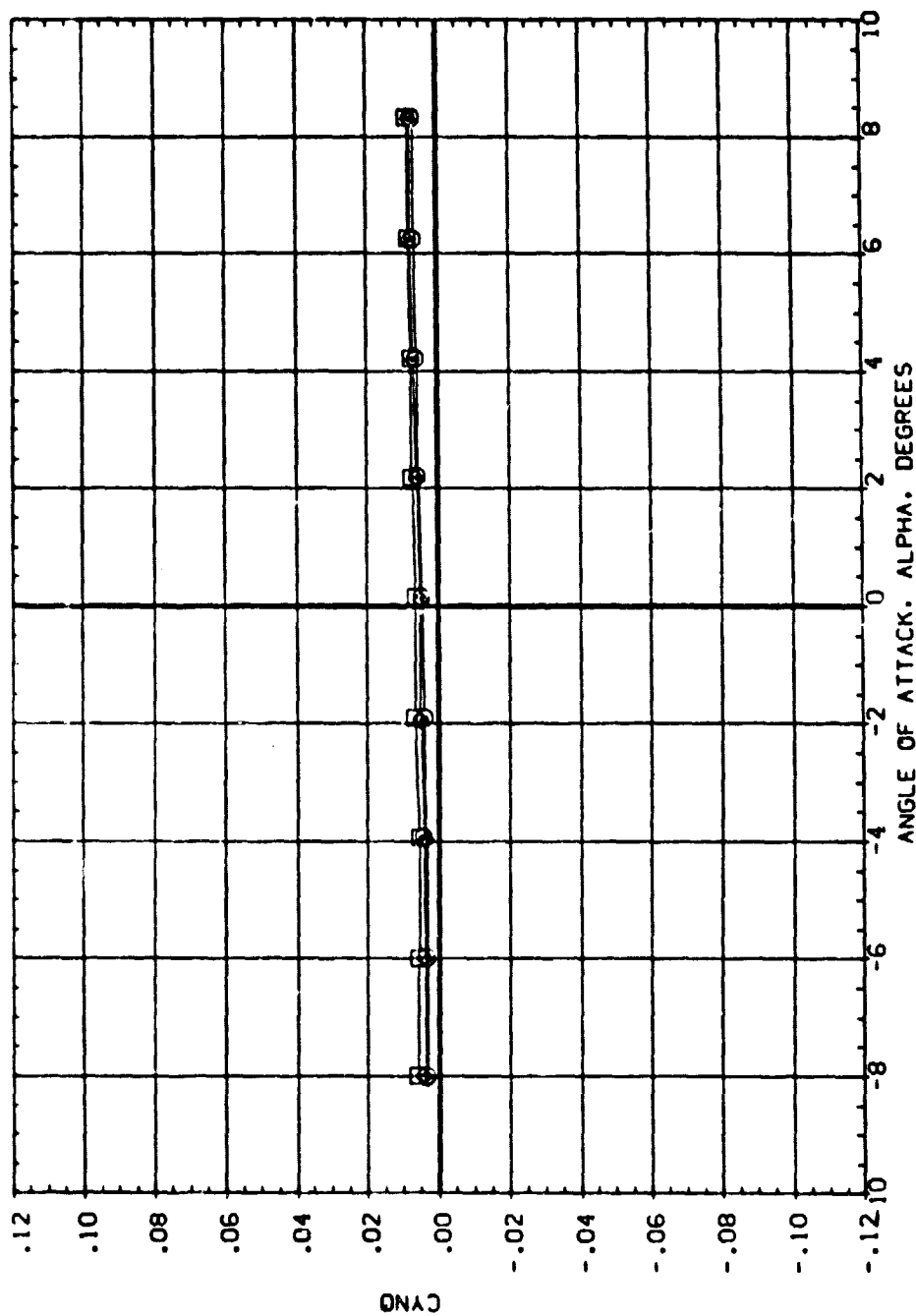


EFFECT OF BODY FLAP

(F)MACH = 1.15

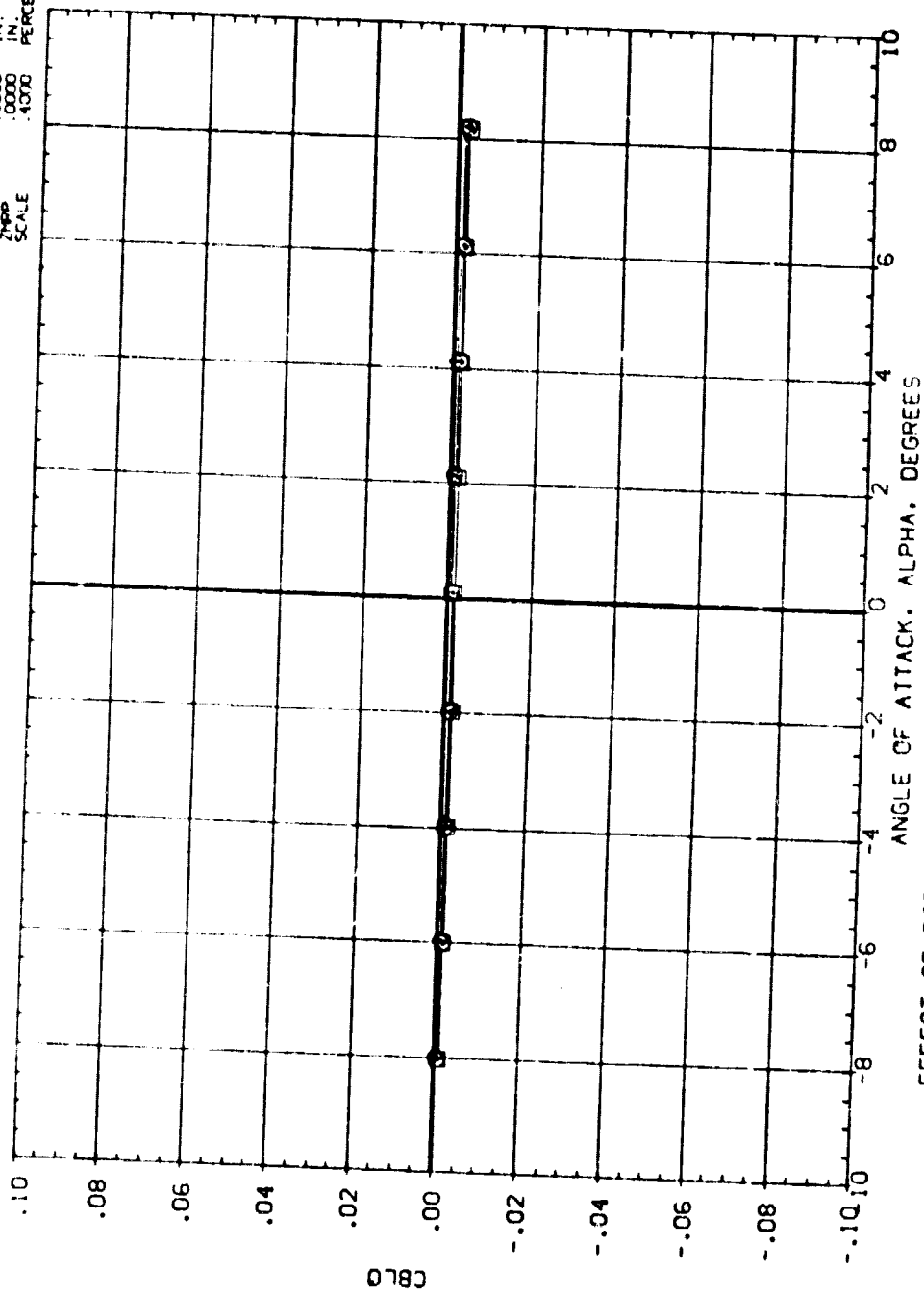
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2808) FA28. MSFC TNT 556. CONF 1G. QNZE 20MPAAT1253
 (FB2810) FA28. MSFC TNT 556. CONF 1G. QNZE 20MPAAT1253
 (FB2813) FA28. MSFC TNT 556. CONF 1G. QNZE 20MPAAT1253

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2008) F128. WSC. 101. 556. CDF 10. 02N20.00PAA11353
 (FB2013) F128. WSC. 101. 556. CDF 10. 02N20.00PAA11353
 (FB2013) F128. WSC. 101. 556. CDF 10. 02N20.00PAA11353

REFERENCE INFORMATION
 SREF 6.1800 50. IN.
 LREF 5.1612 IN.
 BREF 2.7470 IN.
 YPROP 2.7120 IN.
 ZPROP 1.0000 IN.
 SCALE .0000 PERCENT

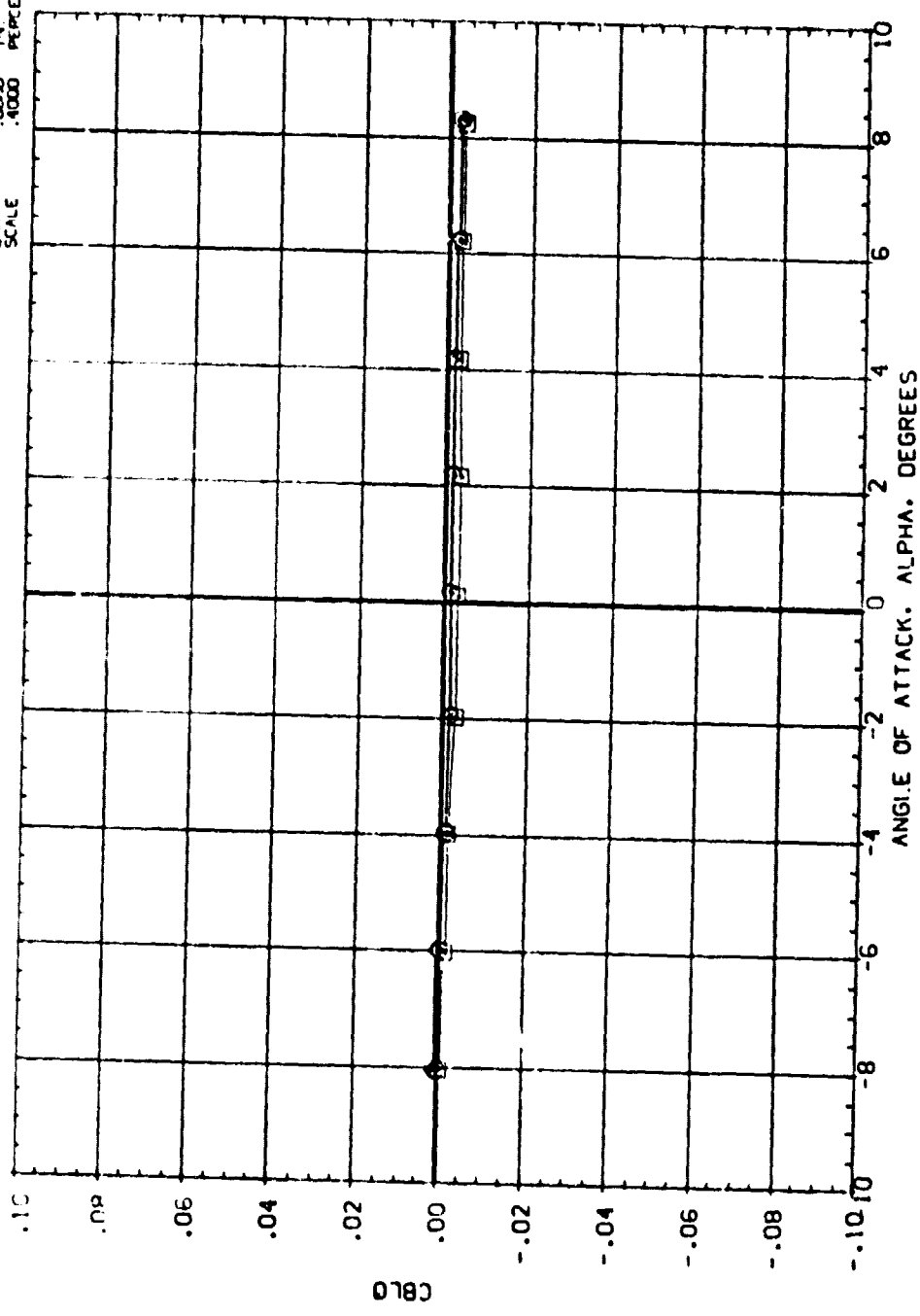


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB28B) FA28: MSC TWT 656: COM IG: 02NZE20PAA11353
 (FB28C) FA28: MSC TWT 656: COM IG: 02NZE20PAA11353
 (FB28J) FA28: MSC TWT 656: COM IG: 02NZE20PAA11353

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XPRD 2.7120 IN.
 YPRD .0000 IN.
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 SCALE .4000 PERCENT

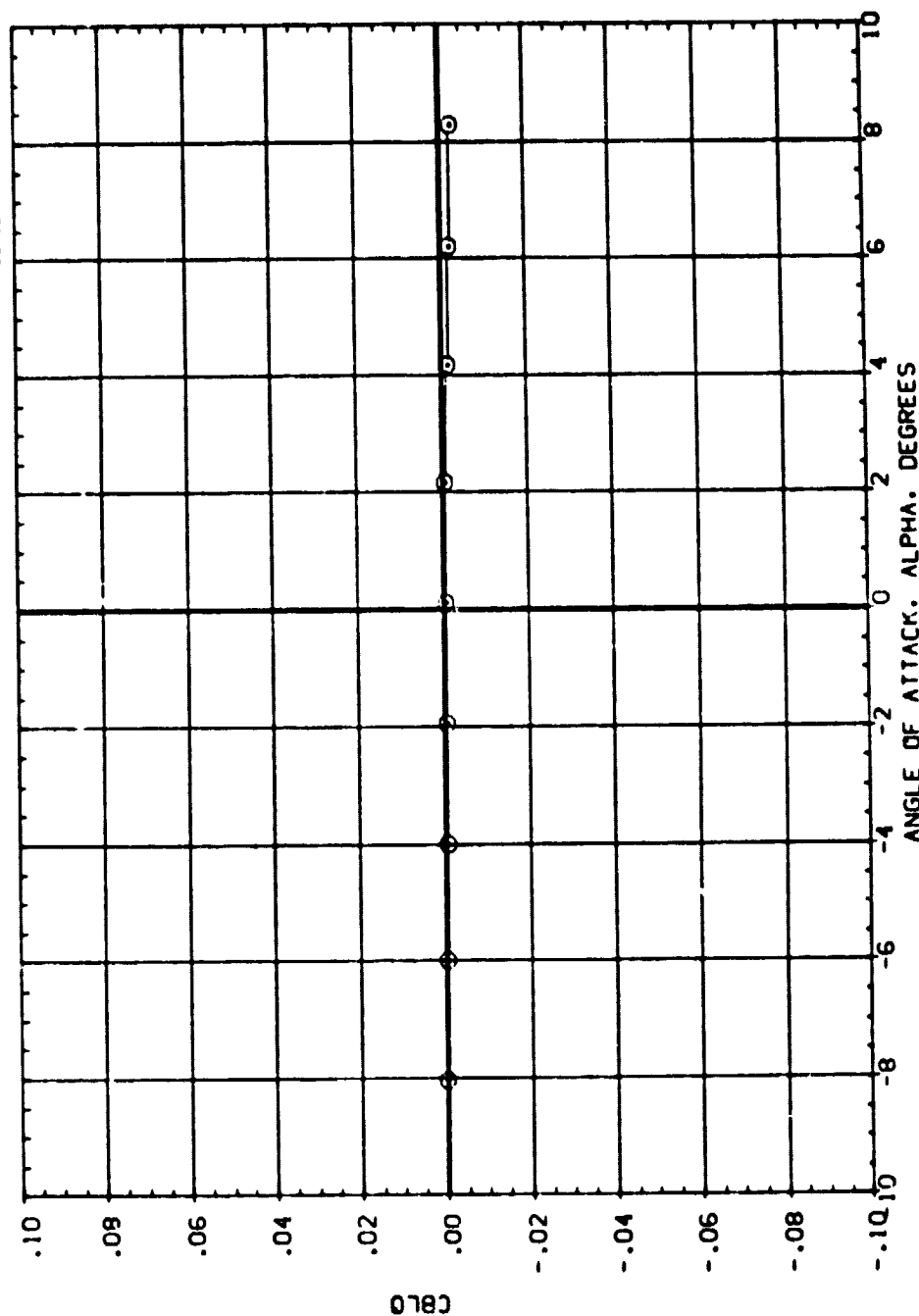


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2808) FA28. MSFC TWT 656. CONFIG. 02N2E2P4A1T7S3
 (FB2810) DATA NOT AVAILABLE
 (FB2813) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7120 IN.
 YREF .0000 IN.
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 SCALE .4000 PERCENT

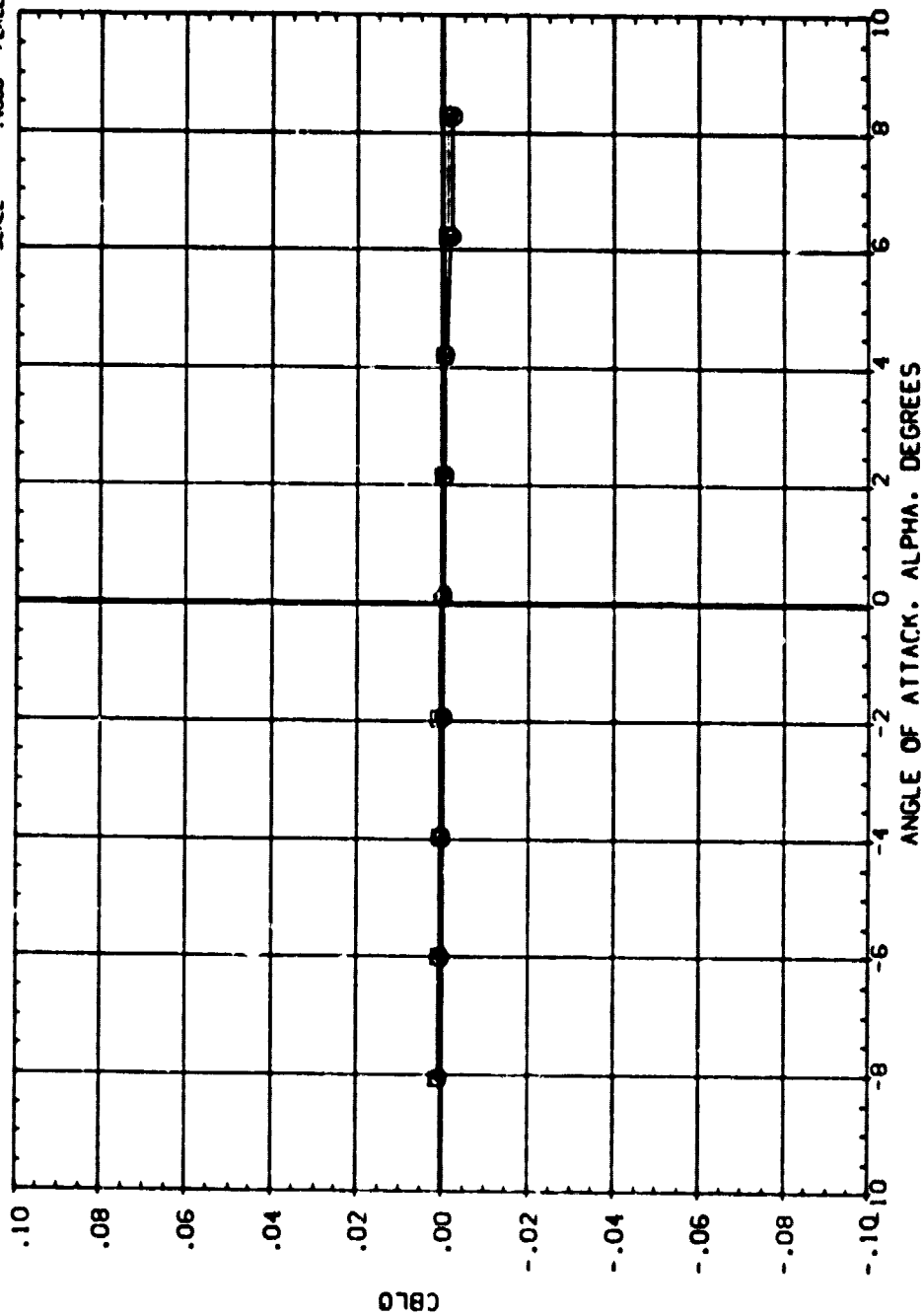


EFFECT OF BODY FLAP

(C)MACH = .95

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION:
 FA20. W5FC TAT 55%. CONF 10. QNZE, 20001153
 FA20. W5FC TAT 55%. CONF 10. QNZE, 20001153
 FA20. W5FC TAT 55%. CONF 10. QNZE, 20001153

REFERENCE INFORMATION:
 SWTP 6.1980 SQ. IN.
 LWF 5.1612 IN.
 WREF 2.7470 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



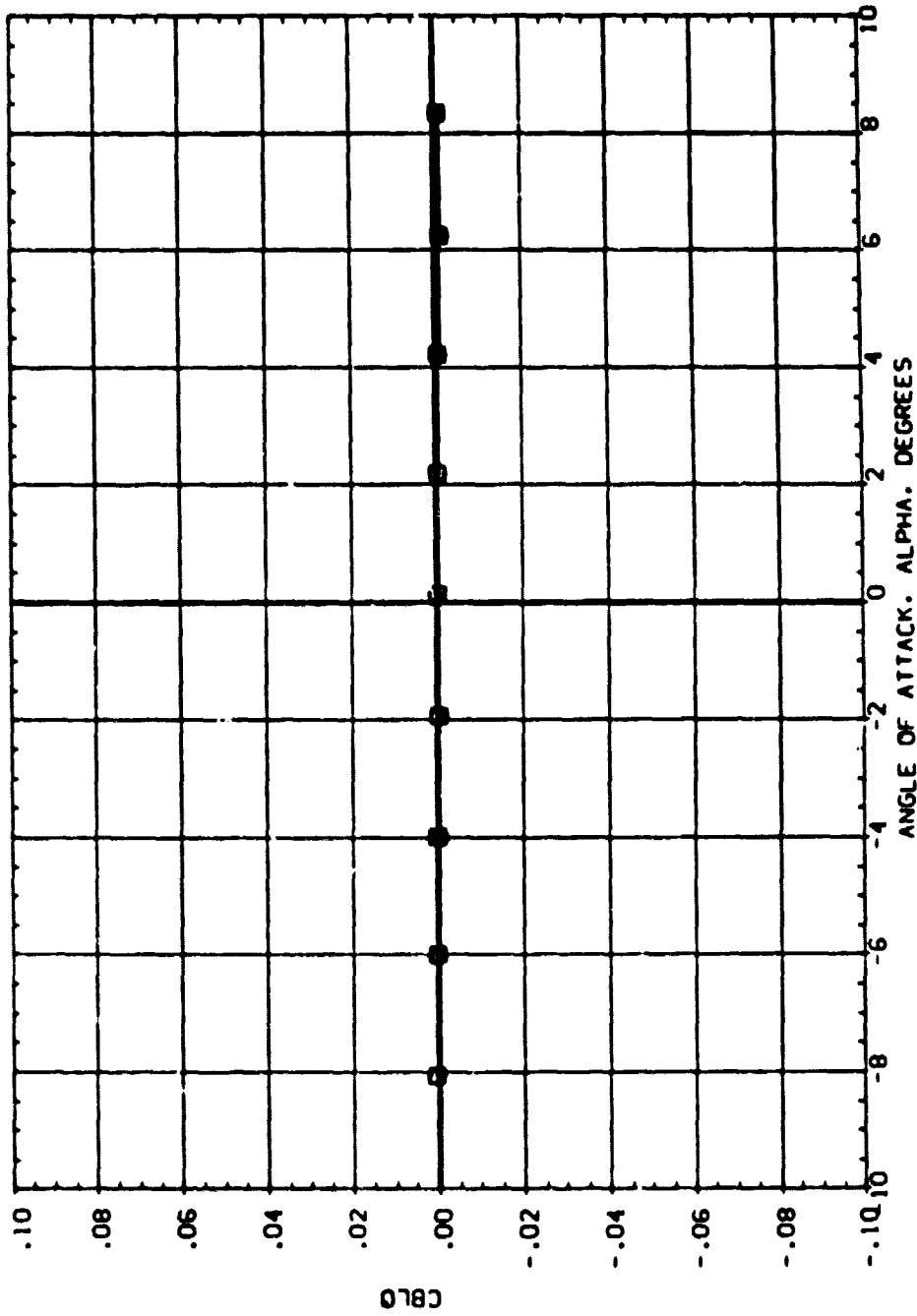
EFFECT OF BODY FLAP

(O)MACH = 1.05

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 100% REPRODUCIBLE

DATA SET SYM. CONFIGURATION DESCRIPTION
 (FB200) PA28. MSC 101 656. COF 10. Q2VZ2PMAAT123
 (FB201) PA28. MSC 101 656. COF 10. Q2VZ2PMAAT123
 (FB202) PA28. MSC 101 656. COF 10. Q2VZ2PMAAT123
 (FB203) PA28. MSC 101 656. COF 10. Q2VZ2PMAAT123

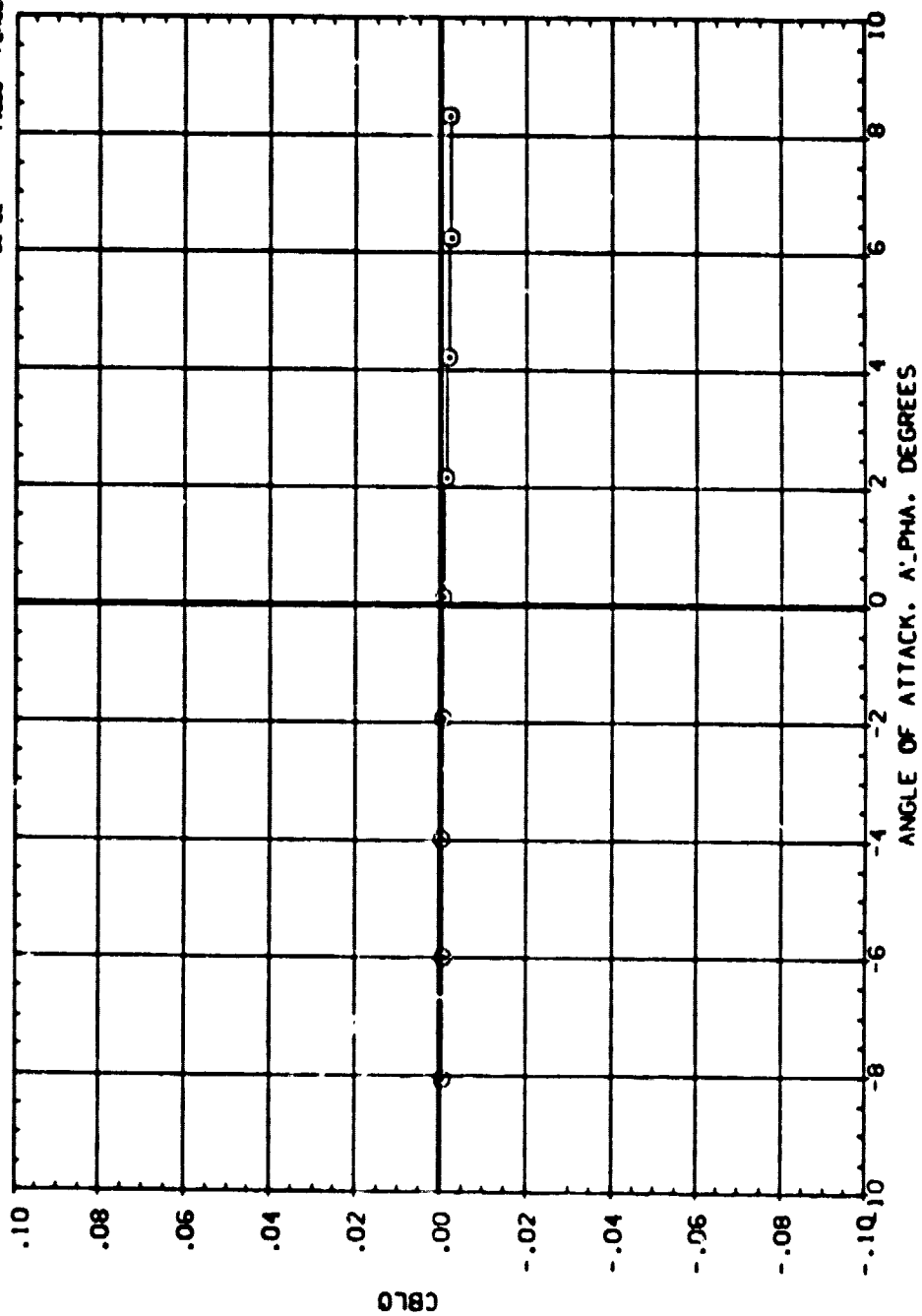
REFERENCE INFORMATION
 SREF 6.1580 SQ. IN
 WREF 3.1612 IN.
 MREF 2.7470 IN.
 WREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT



EFFECT OF BODY FLAP

(C)MACH = 1.10

SCALE	IN.	PERIOD
5000	IN.	PERIOD
2000	IN.	PERIOD
1000	IN.	PERIOD
500	IN.	PERIOD
250	IN.	PERIOD
125	IN.	PERIOD
62.5	IN.	PERIOD
31.25	IN.	PERIOD
15.625	IN.	PERIOD
7.8125	IN.	PERIOD
3.90625	IN.	PERIOD
1.953125	IN.	PERIOD
0.9765625	IN.	PERIOD
0.48828125	IN.	PERIOD
0.244140625	IN.	PERIOD
0.1220703125	IN.	PERIOD
0.06103515625	IN.	PERIOD
0.030517578125	IN.	PERIOD
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0.00762939453125	IN.	PERIOD
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0.000476837158203125	IN.	PERIOD
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0.0000000000000017347234759768066855642490887892578125	IN.	PERIOD
0.0000000000000008673617379884033427821249544394640625	IN.	PERIOD
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0.0000000000000001084202172485504178477656193049330078125	IN.	PERIOD
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0.000000000000000027105054312137604461941404826233251953125	IN.	PERIOD
0.0000000000000000135525271560688022309707024131166259765625	IN.	PERIOD

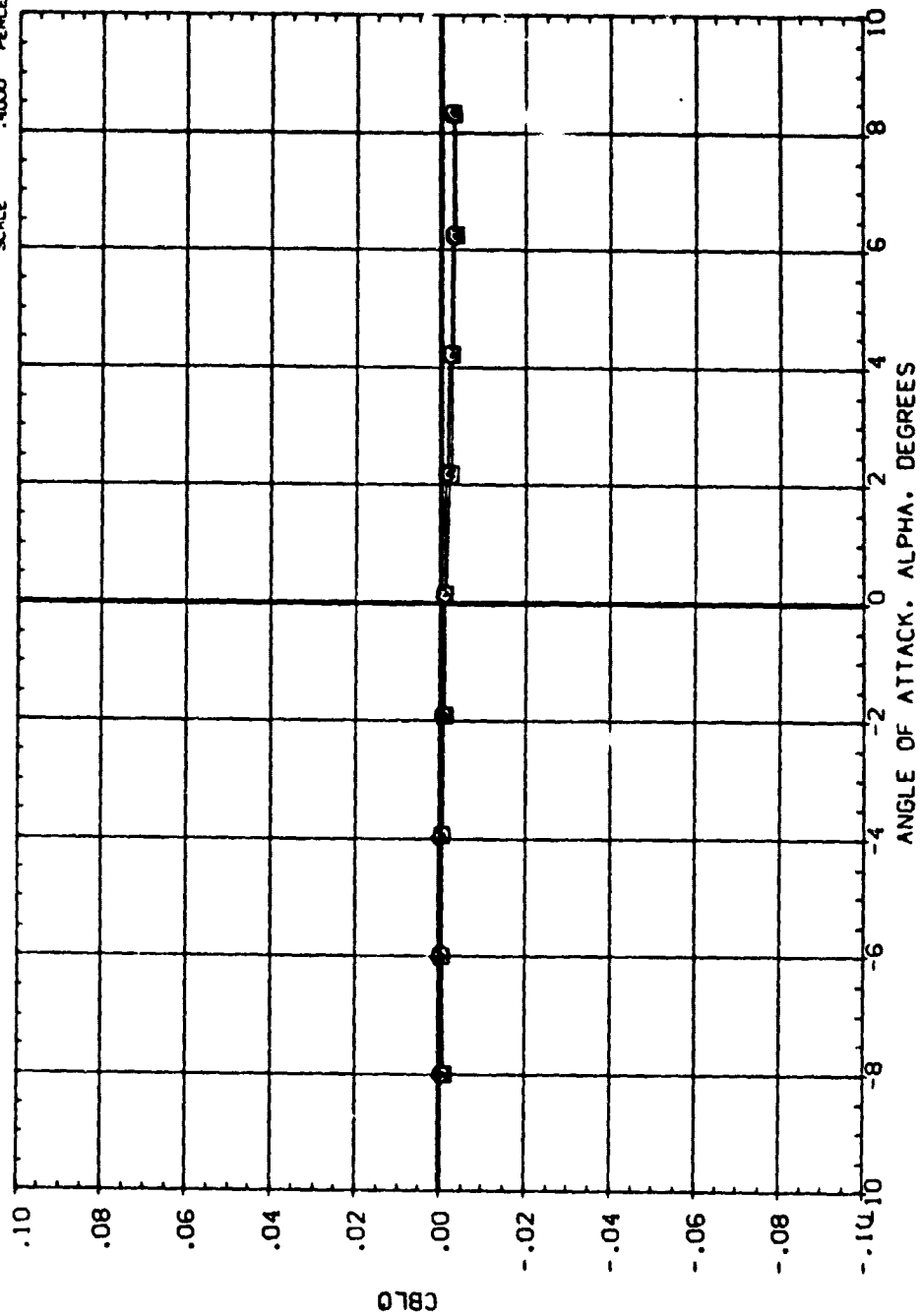


EFFECT OF BODY FLAP

$$(F)_{\text{MACH}} = 1.15$$

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FB2808) FA28. MSFC TVT 656. CONF IG. Q2VZ20PAPAT1353
 (FB2810) FA28. MSFC TVT 656. CONF IG. Q2VZ20PAPAT1353
 (FB2813) FA28. MSFC TVT 656. CONF IG. Q2VZ20PAPAT1353

REFERENCE INFORMATION
 SREF 8.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 WREF 2.7170 IN.
 VREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT



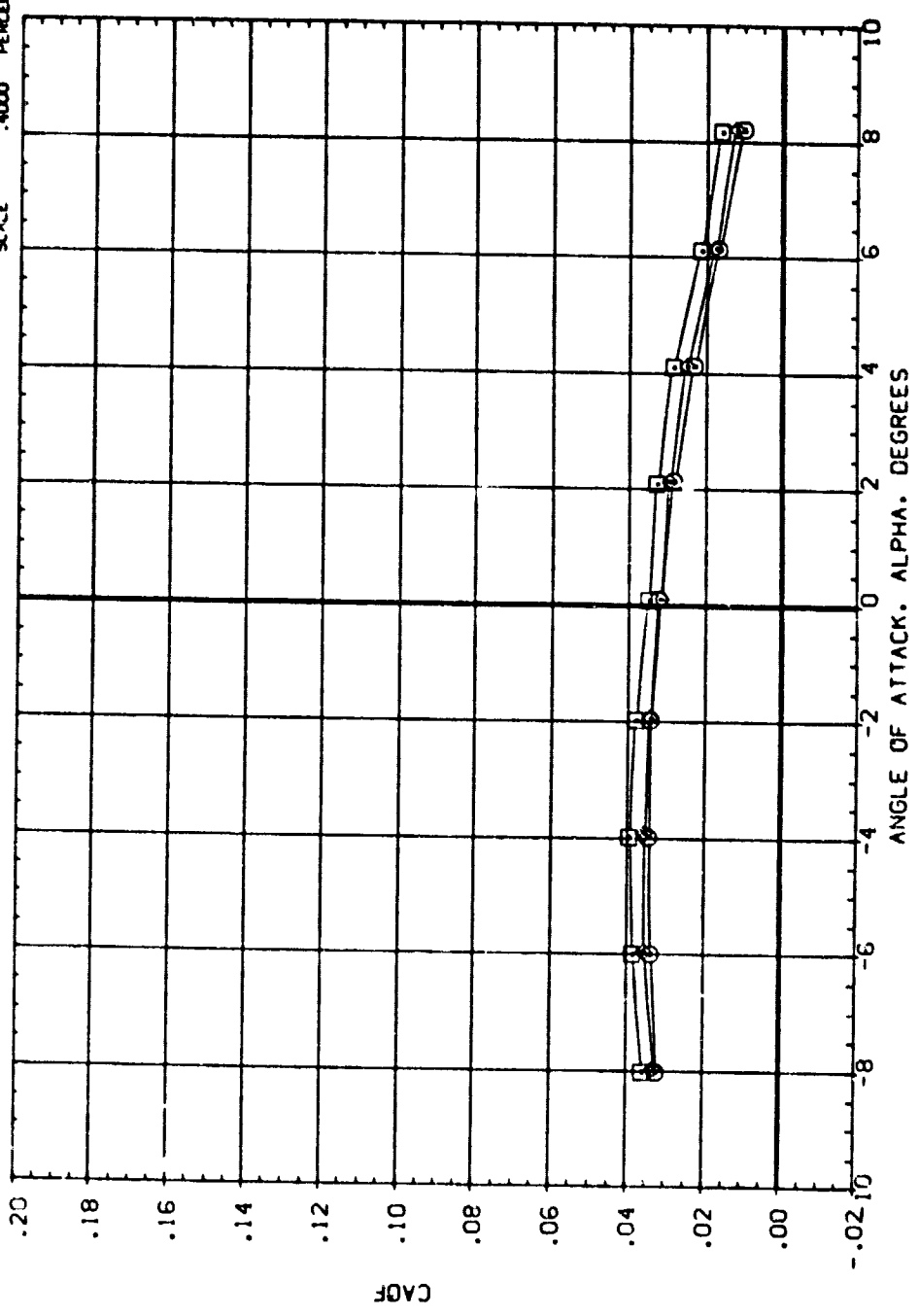
EFFECT OF BODY FLAP

(GMACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION REFERENCE INFORMATION

(FB2808)	FA28. MSC TWT 656. CONF 16.	QZVZ2808AATT353
(FB2810)	FA28. MSC TWT 656. CONF 16.	QZVZ2808AATT353
(FB2813)	FA28. MSC TWT 656. CONF 16.	QZVZ2808AATT353

SREF	6.1980	SO. IN
LOEF	3.1612	IN.
BREF	2.7470	IN.
XREF	2.7120	IN.
YREF	.0000	IN.
ZREF	.0000	IN.
SCALE	.4000	PERCENT

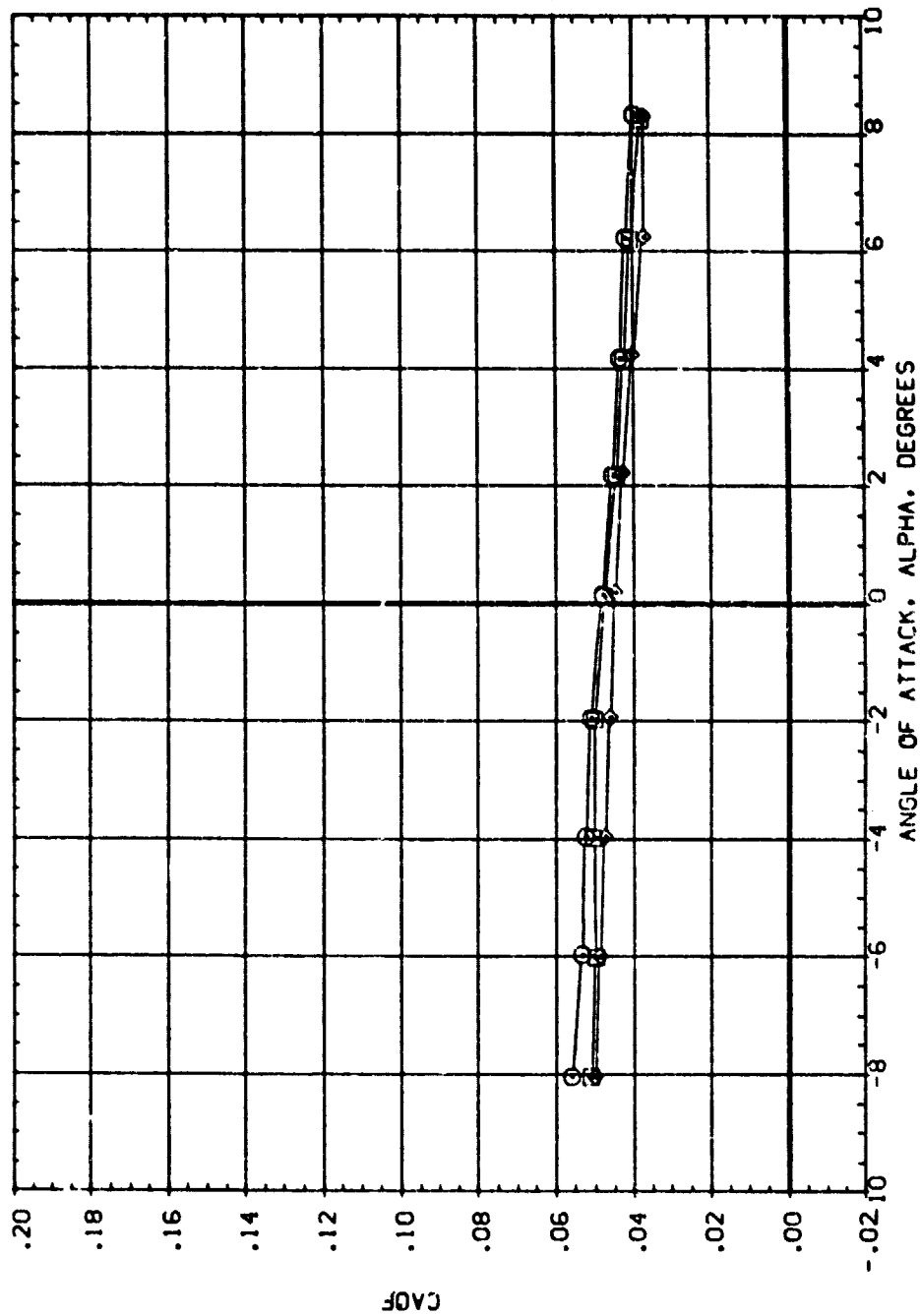


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2808) FA28. HSC INT 656. CONF 1G. GZVZ28PAA11353
 (FB2810) FA28. HSC INT 656. CONF 1G. GZVZ28PAA11353
 (FB2813) FA28. HSC INT 656. CONF 1G. GZVZ28PAA11353

REFERENCE INFORMATION
 SREF 5.1850 50. IN
 LREF 3.1612 IN.
 BRP 2.7470 IN.
 VREF 1.1220 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

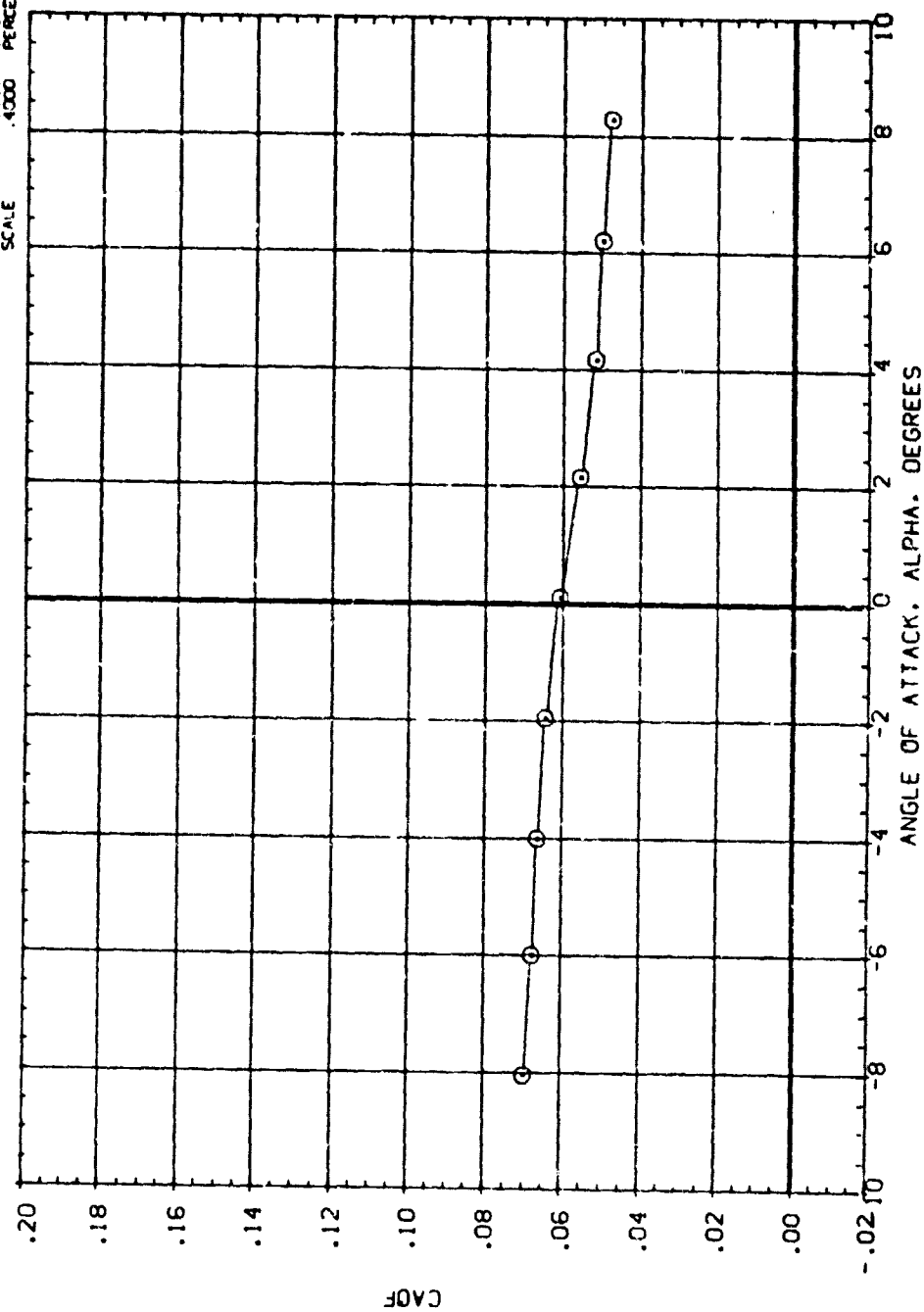


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL: 8
 (FB2808) FA28, MSFC, "V" 656, CONFIG. CZUZE2PAPAATT353
 (FB2810) DATA NOT AVAILABLE
 (FB2813) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1860 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

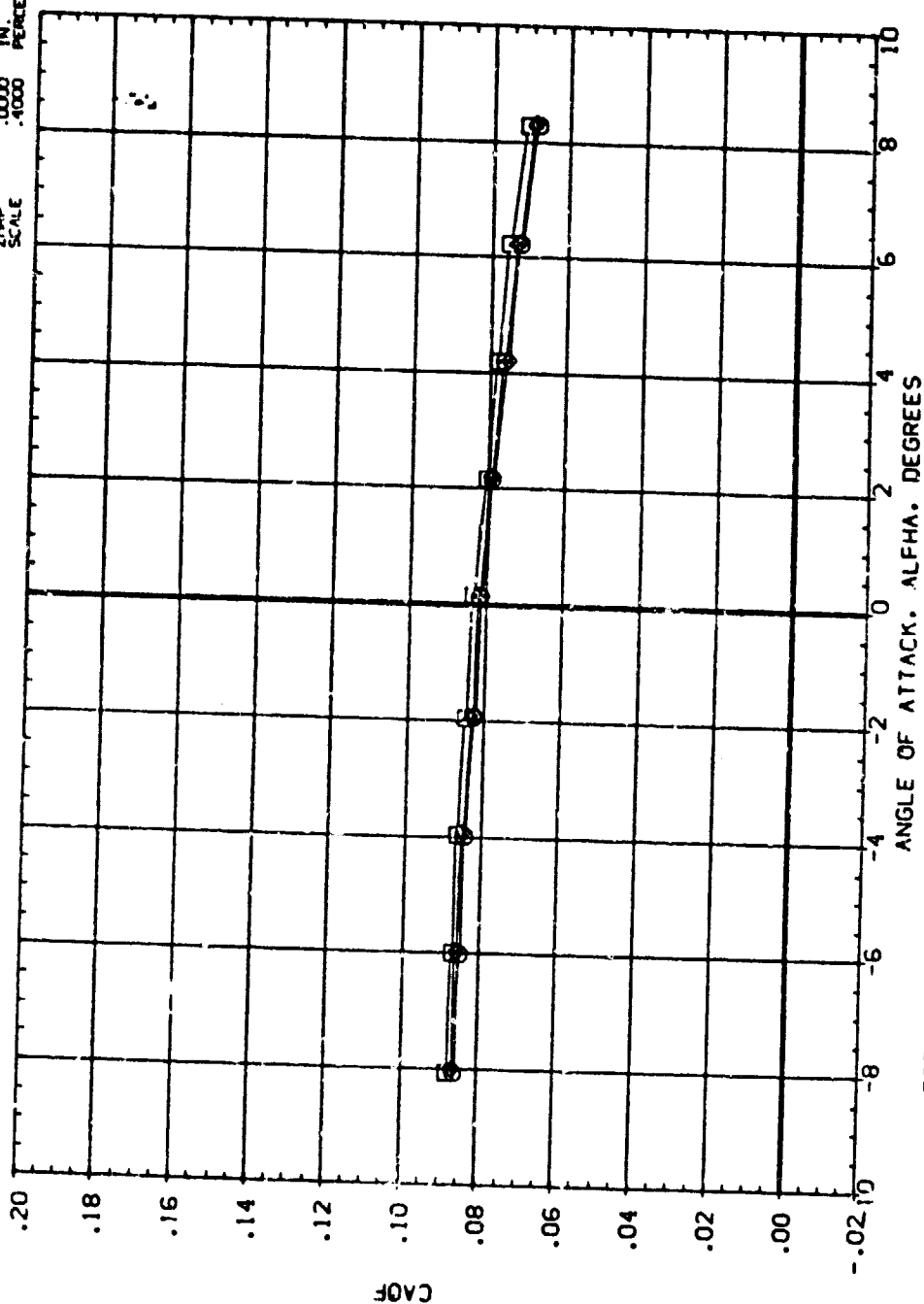


EFFECT OF BODY FLAP

(C)MACH = .95

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2008) FA28. MSFC TVT 656. CONF 1G. 03NZE2NPAT11353
 (FB2810) FA28. MSFC TVT 656. CONF 1G. 03NZE2NPAT11353
 (FB2813) FA28. MSFC TVT 656. CONF 1G. 03NZE2NPAT11353

REFERENCE INFORMATION
 SREF 6.1360 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XPRP 2.7120 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .4000 PERCENT

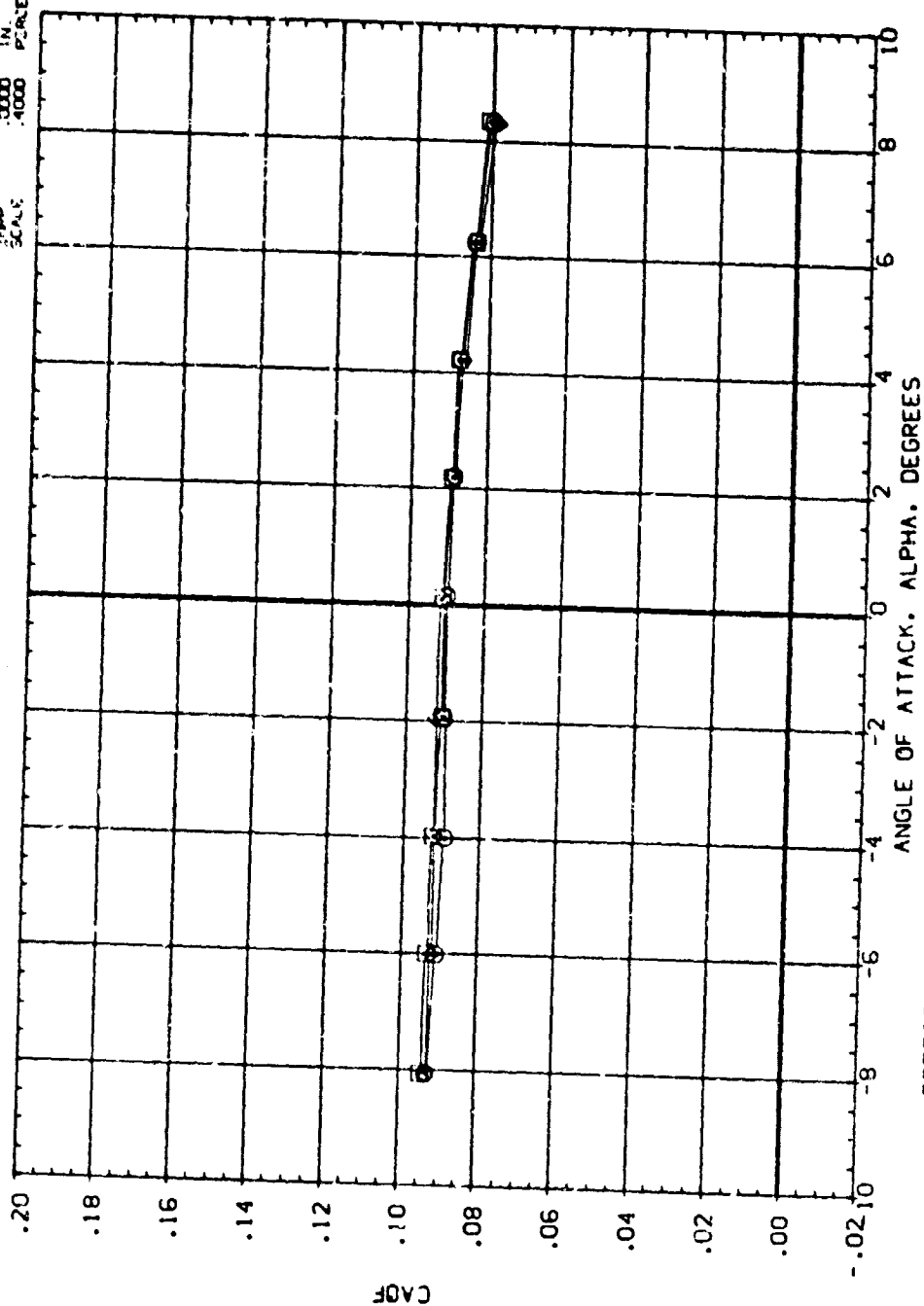


EFFECT OF BODY FLAP

(D)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2808) FA28. MSFC TVT 656. CONF 1G. C2NZE200PAAT1353
 (FB2810) FA28. MSFC TVT 656. CONF 1G. C2NZE200PAAT1353
 (FB2813) FA28. MSFC TVT 656. CONF 1G. C2NZE200PAAT1353

REFERENCE INFORMATION
 SREF 6.1980 SO. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 YPRD .0000 IN.
 SCALE .4000 P/LEN

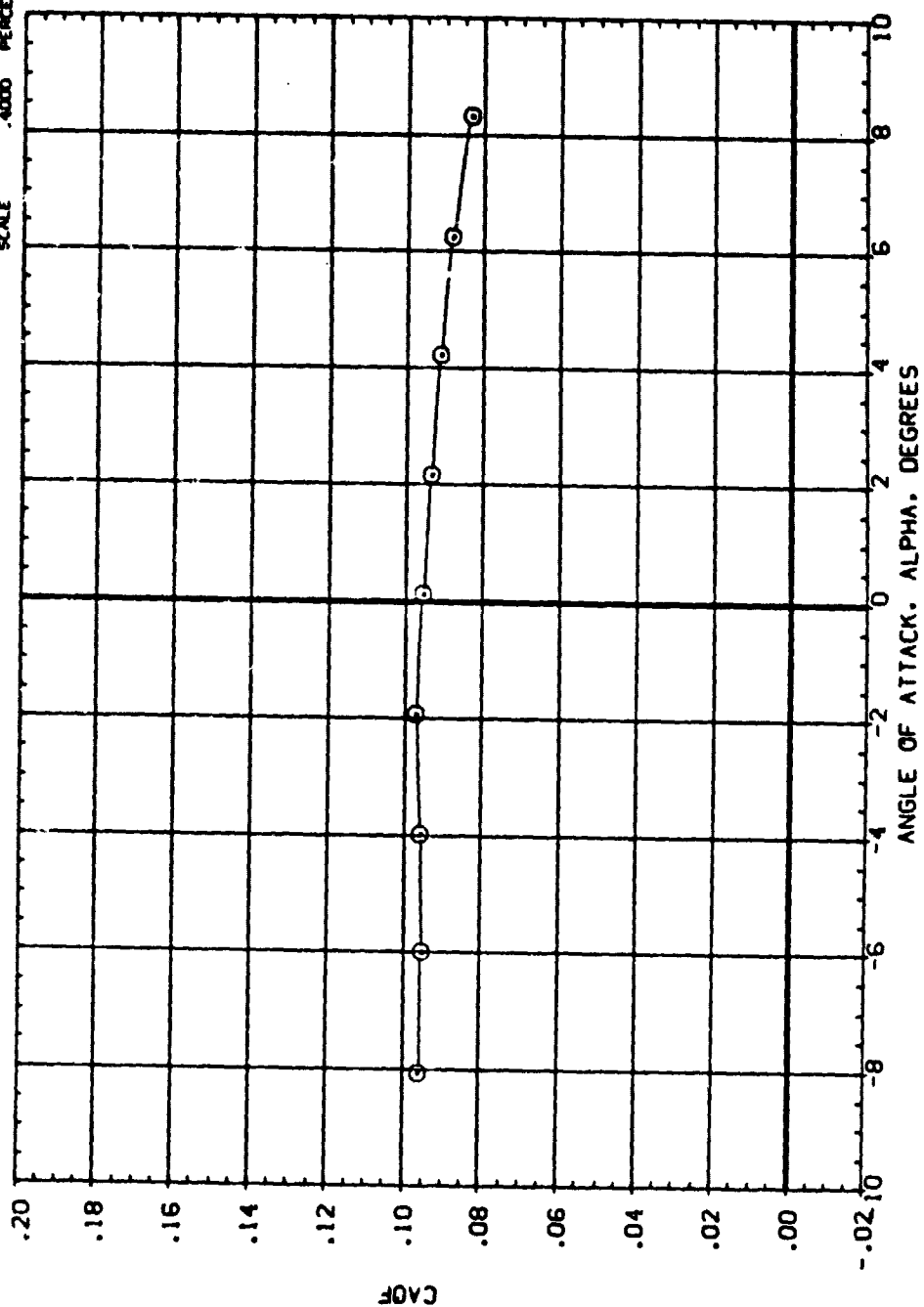


EFFECT OF BODY FLAP

(E)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (PB2808) FA28, MSFC TVT 656, CONFIG. 02NZE29PAATT353
 (PB2810) DATA NOT AVAILABLE
 (PB2813) DATA NOT AVAILABLE

REFERENCE INFORMATION
 SHEET 6, 1800 50. IN
 LINE 3, 1617 IN.
 BRKT 2, 7170 IN.
 WARP 2, 7170 IN.
 YWARP 2, 7170 IN.
 ZWARP 2, 7170 IN.
 SCALE .0000 PERCENT

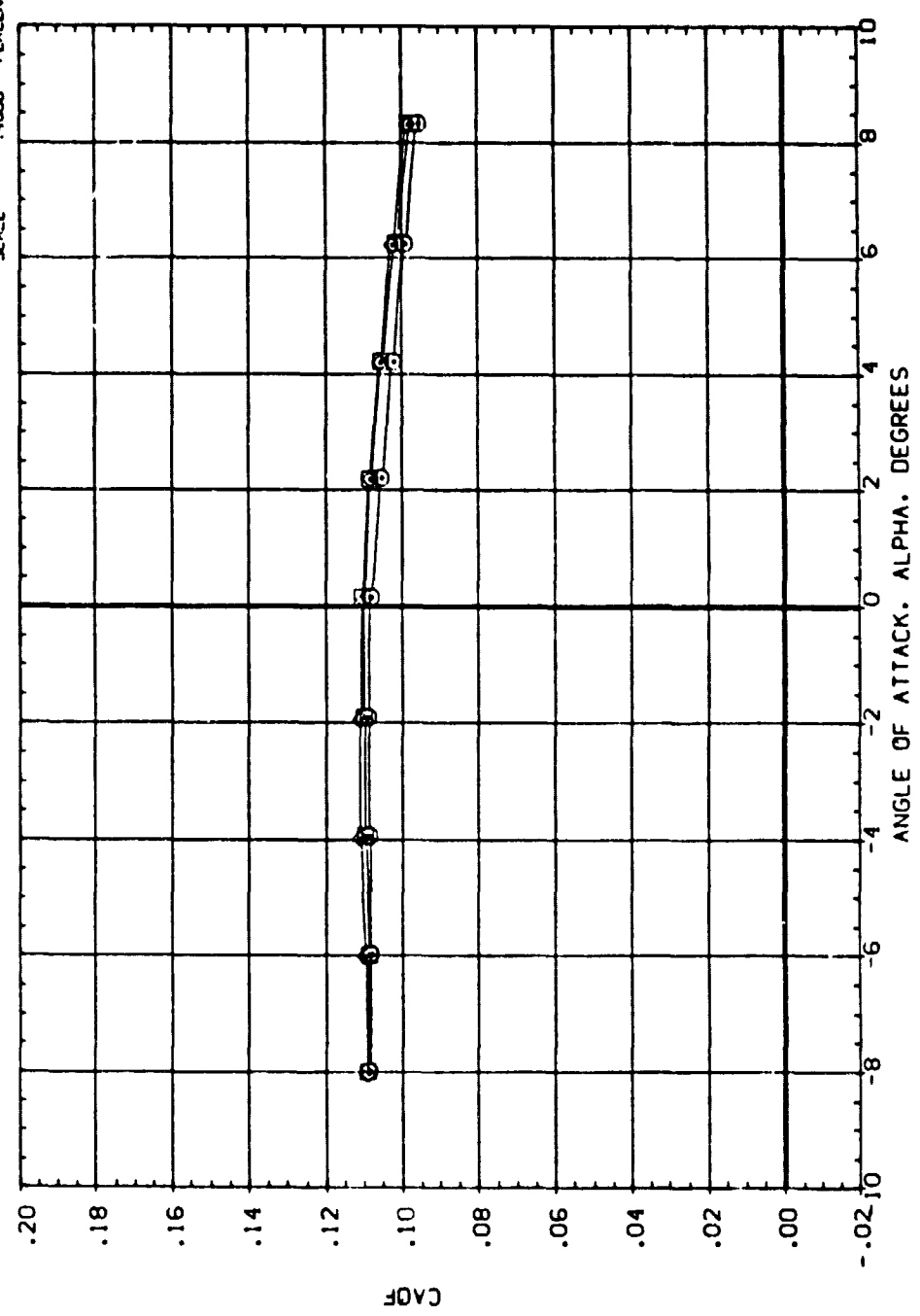


EFFECT OF BODY FLAP

(F)MACH = 1.15

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FB2808) FA28. MSFC TWT 656. CONF 1G. Q2V2E, 20APAT1353
 (FB2810) FA28. MSFC TWT 656. CONF 1G. Q2V2E, 20APAT1353
 (FB2813) FA28. MSFC TWT 656. CONF 1G. Q2V2E, 20APAT1353

REFERENCE INFORMATION:
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

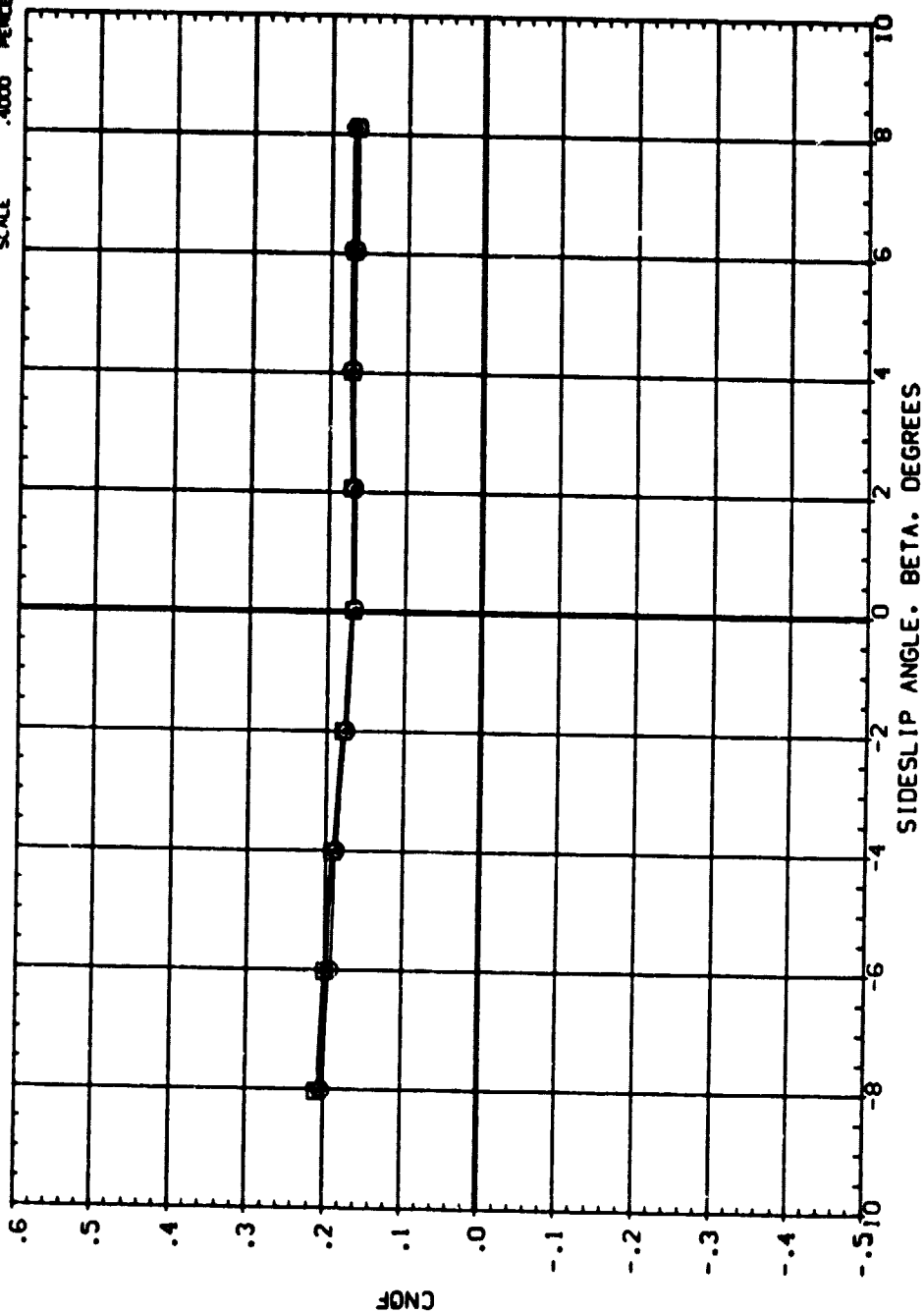


EFFECT OF BODY FLAP

(G)MACH = 1.25

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FB2809) FA28. HSC TVT 656. CONF IG. QDZE28PAA11353
 (FB2811) FA28. HSC TVT 656. CONF IG. QDZE28PAA11353
 (FB2812) FA28. HSC TVT 656. CONF IG. QDZE28PAA11353

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

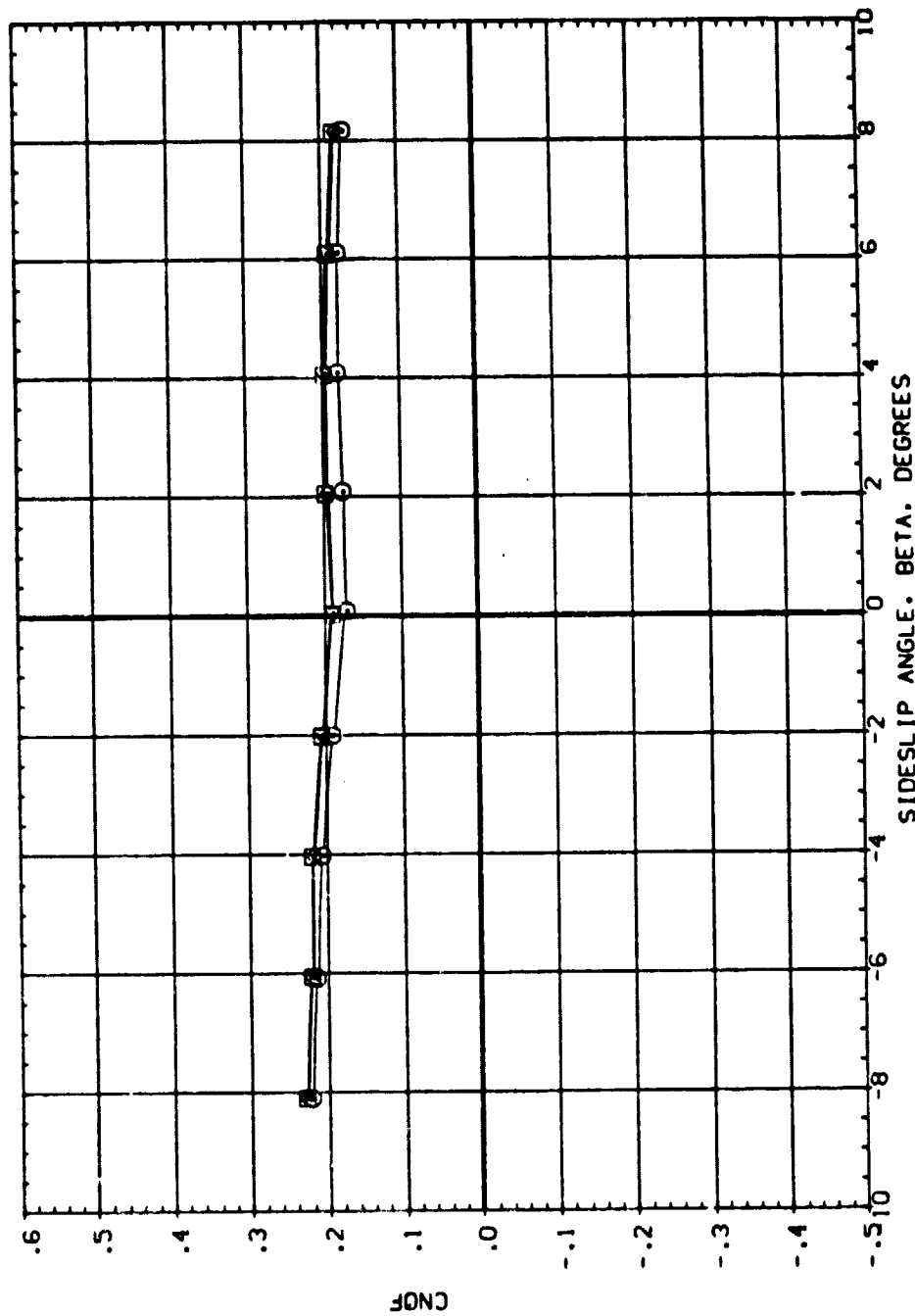


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2809) FA28. HSC TWT 656. CONF 10. OZVZ 28PAAT1353
 (FB2811) FA28. HSC TWT 656. CONF 10. OZVZ 28PAAT1353
 (FB2812) FA28. HSC TWT 656. CONF 10. OZVZ 28PAAT1353

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

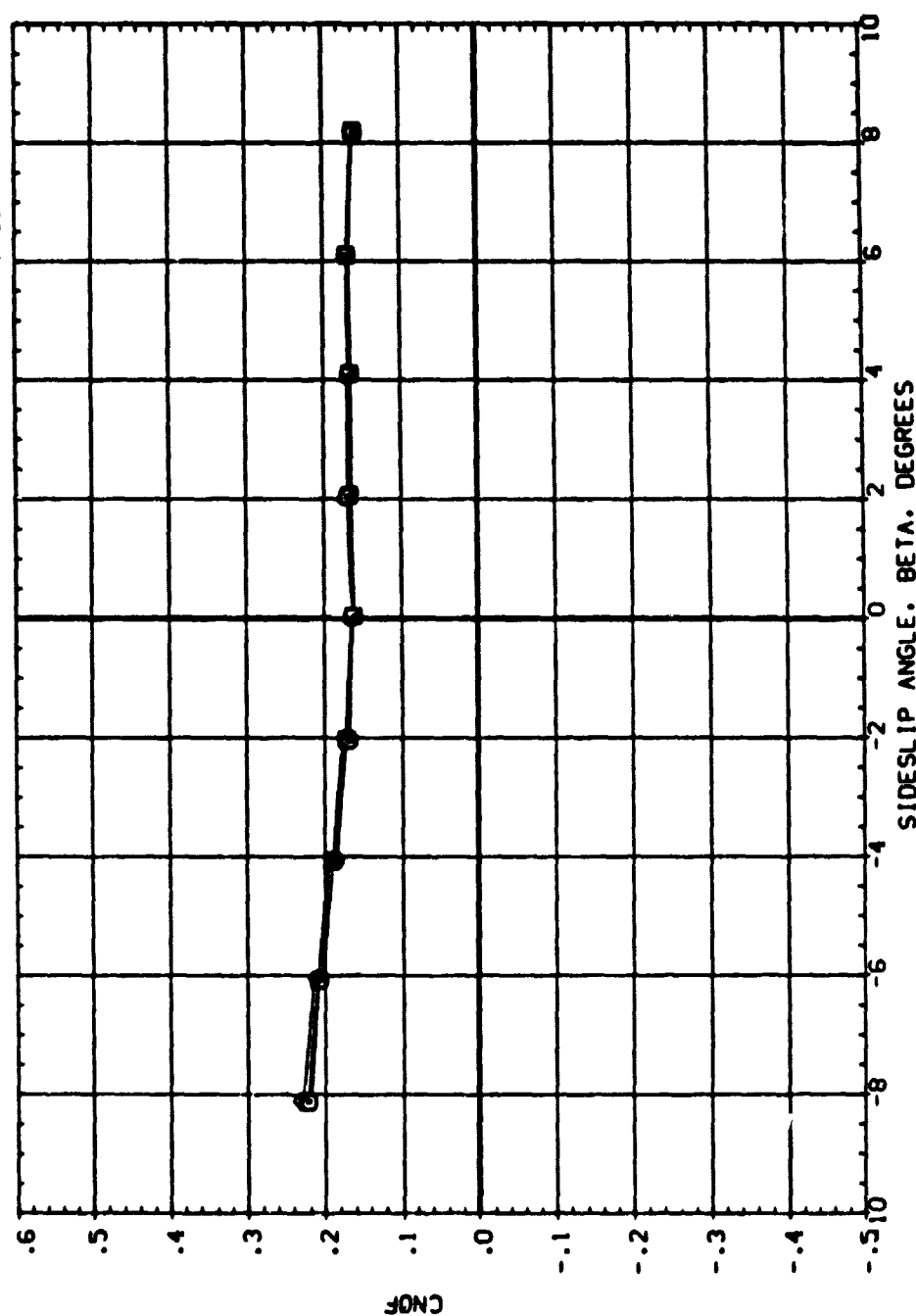


EFFECT OF BODY FLAP

(B)MACH = .90

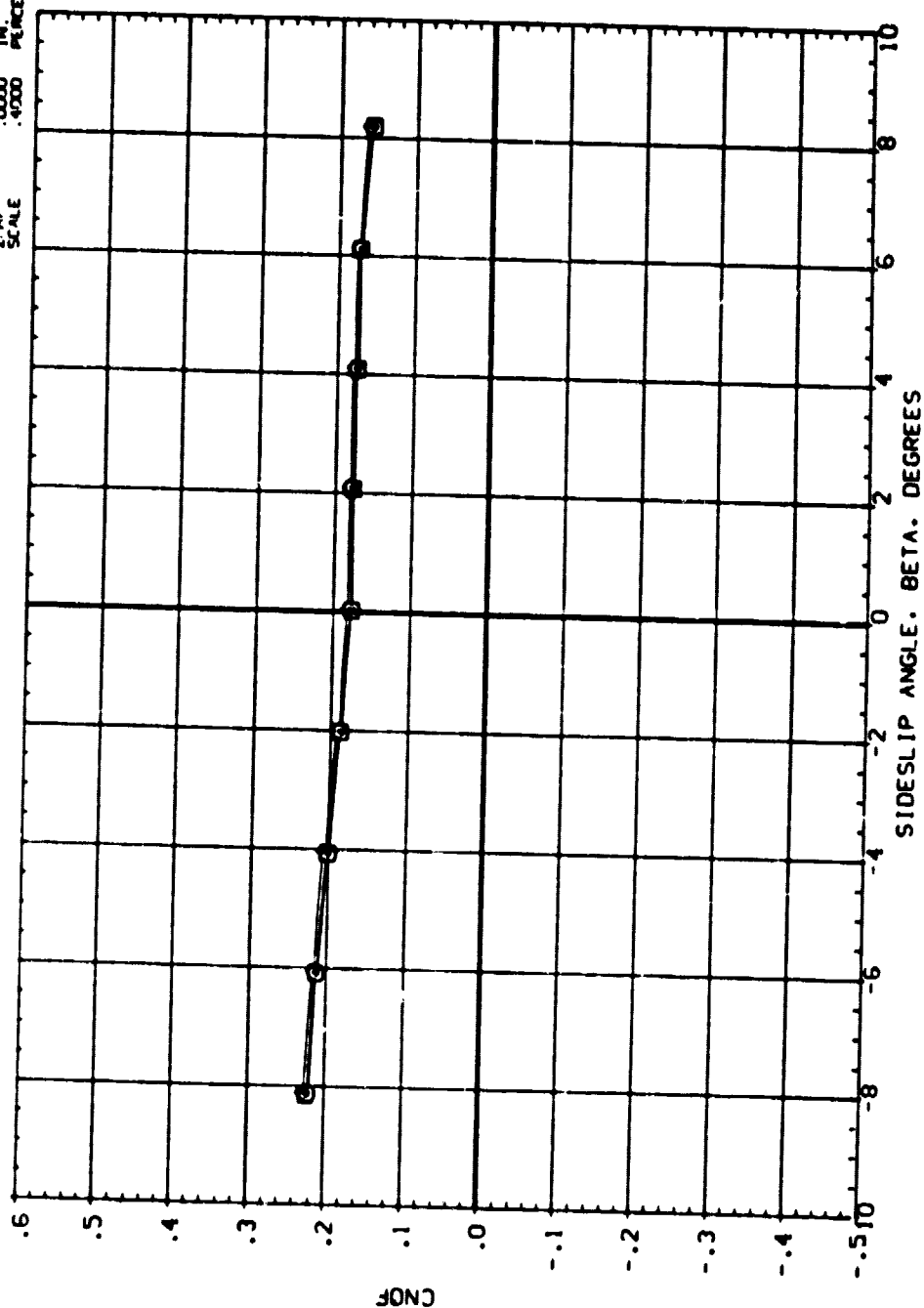
DATA SET SYMBOL	CONFIDURATION DESCRIPTION	CONFIDURATION
(F2B209)	F2B. MSC TVT 656. CONF IG.	CONFIDURATION1353
(F2B211)	F2B. MSC TVT 656. CONF IG.	CONFIDURATION1353
(F2B212)	F2B. MSC TVT 656. CONF IG.	CONFIDURATION1353

REFERENCE INFORMATION	
SREF	6.1980
REF	5.1612
REF	3.7470
REF	2.7120
REF	.0000
REF	.0000
REF	.0000
SCALE	.0000



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB003) PA20. MSC TWT 656. COF IG. ONZE20MPAAT133
 (FB011) PA20. MSC TWT 656. COF IG. ONZE20MPAAT133
 (FB012) PA20. MSC TWT 656. COF IG. ONZE20MPAAT133

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 MREF 2.7120 IN.
 TREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

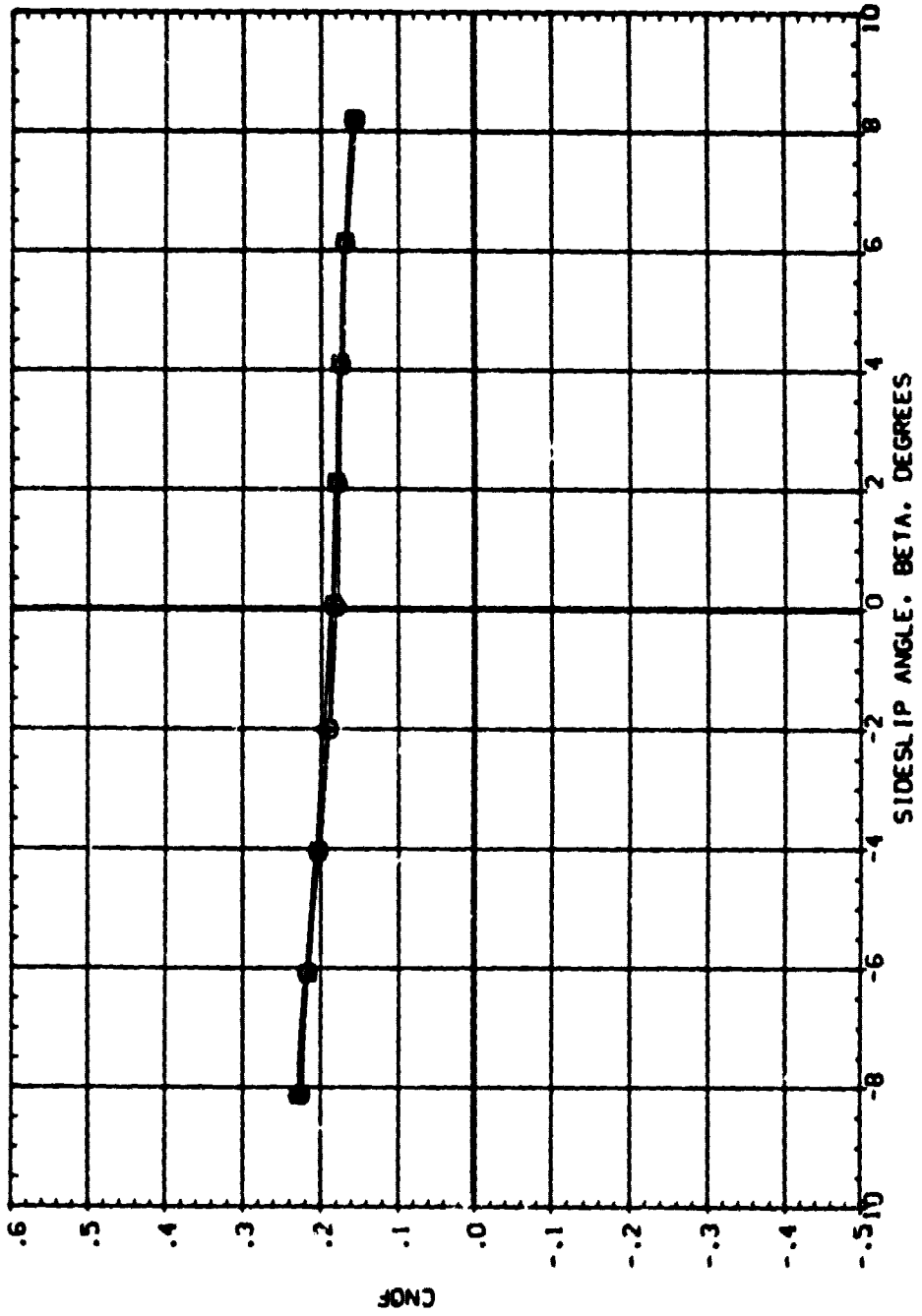


EFFECT OF BODY FLAP

(D)MACH = 1.10

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION:
 (P8001) PAIR: MSFC TWT 656: CONF 16: ONZE2PMAATT353
 (P8011) PAIR: MSFC TWT 656: CONF 16: ONZE2PMAATT353
 (P8012) PAIR: MSFC TWT 656: CONF 16: ONZE2PMAATT353

REFERENCE INFORMATION:
 SET: 5.1380 IN.
 LIFT: 5.1612 IN.
 DRIFT: 3.2470 IN.
 YAW: 2.7132 IN.
 ROLL: .0000 IN.
 SCALE: .0000 IN.
 PERIOD: .0000 IN.

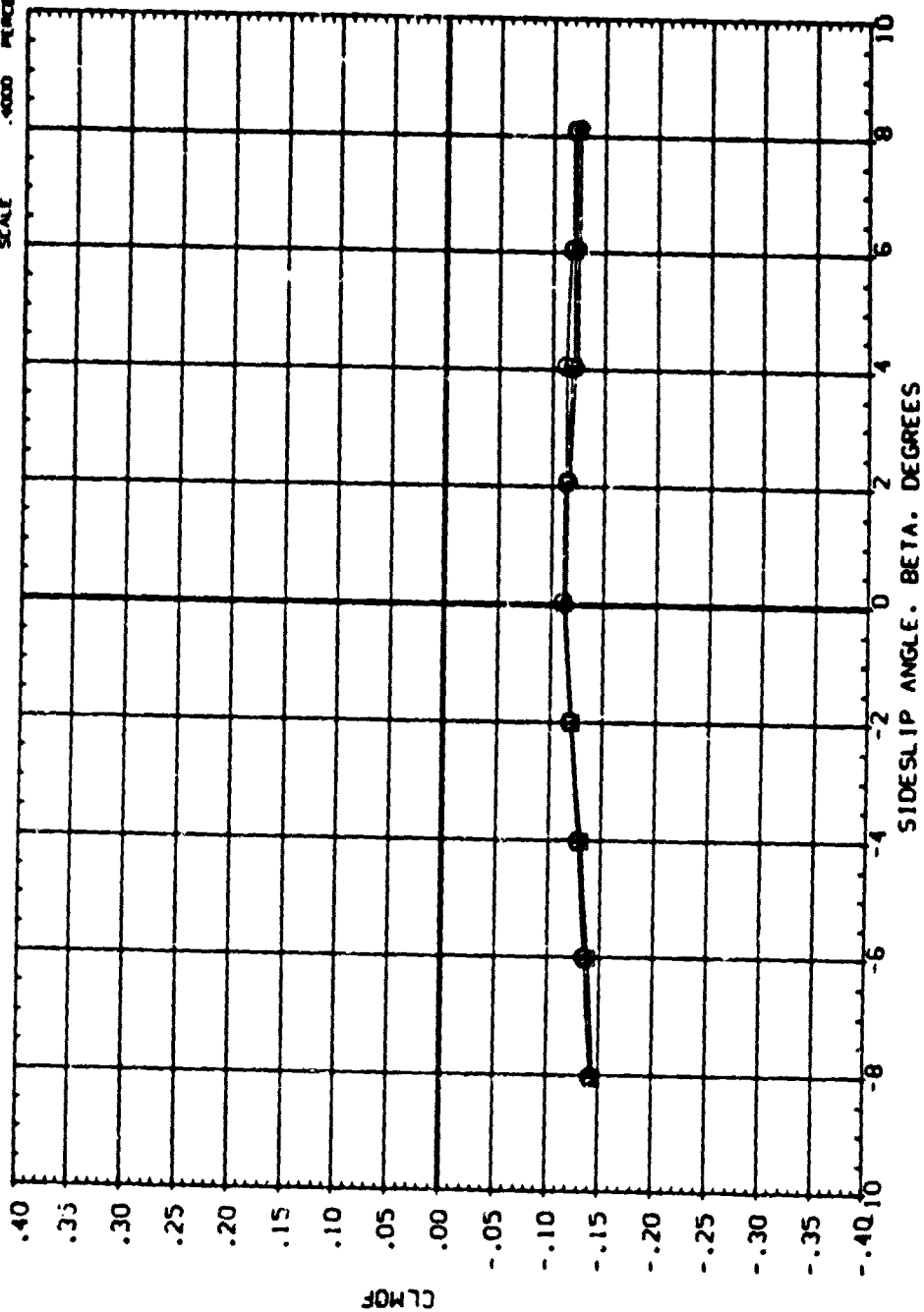


EFFECT OF BODY FLAP

(E)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (182011) 8 P28. P5C T4T 656. CONF 16. Q2VZ 20PAA11353
 (182011) 8 P28. P5C T4T 656. CONF 16. Q2VZ 20PAA11353
 (182012) 8 P28. P5C T4T 656. CONF 16. Q2VZ 20PAA11353

REFERENCE INFORMATION
 SPRT 6.1580 50. IN
 WGT 3.1612 IN.
 AREA 3.1470 IN.
 WING 2.7170 IN.
 WING .0000 IN.
 SCALE .0000 PERCENT

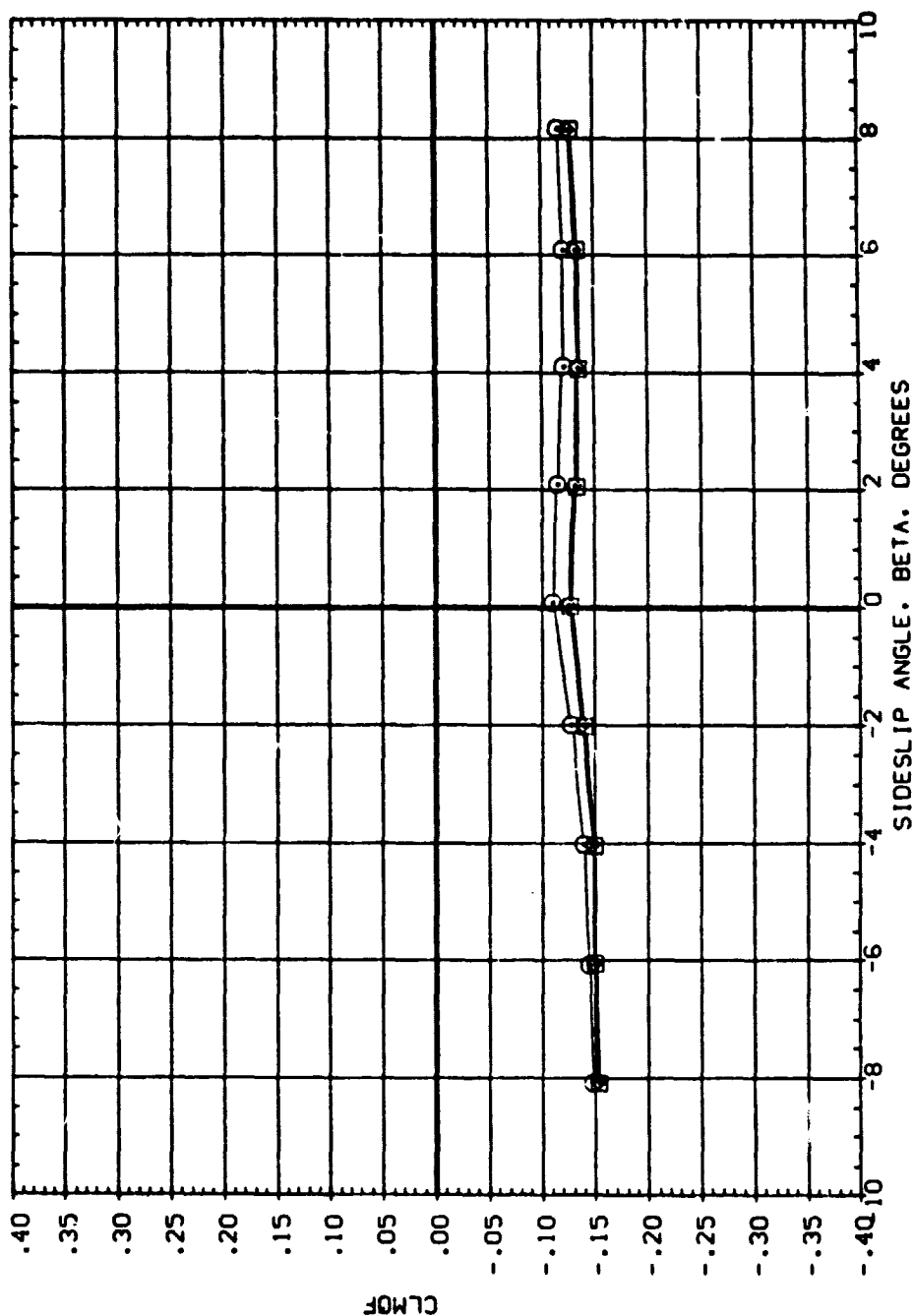


EFFECT OF BODY FLAP

(A)MACH = .50

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2809) 0 FA28. MSFC TVT 656. CONF 1G. Q2N ZE 2NPAATT35J
 (FB2811) 0 FA28. MSFC TVT 656. CONF 1G. Q2N ZE 2NPAATT35J
 (FB2812) 0 FA28. MSFC TVT 656. CONF 1G. Q2N ZE 2NPAATT35J

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

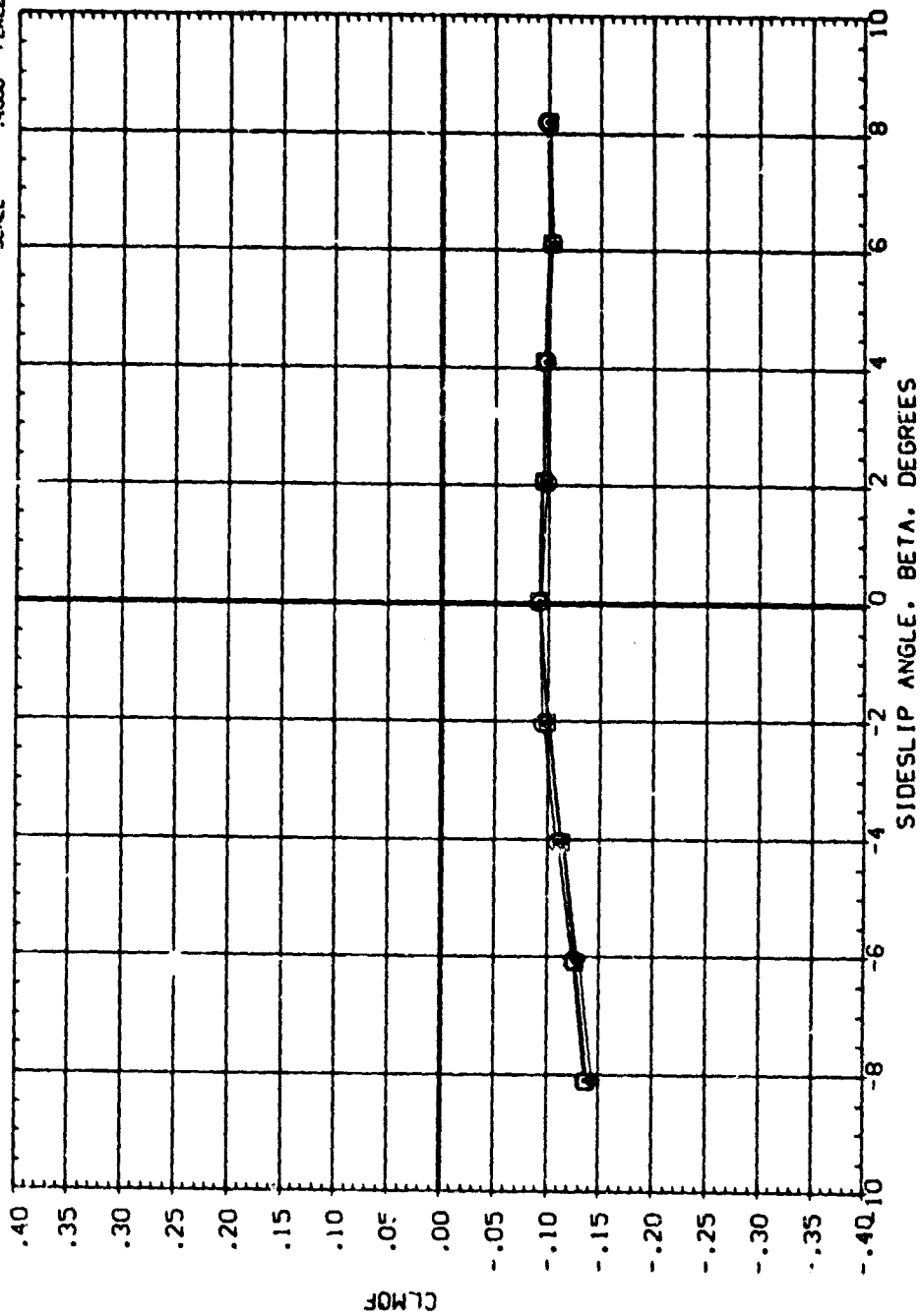


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMOL. CONFIGURATION DESCRIPTION
 (F82809) 3 FA28. MS/C TVT 656. CONF IG. 02VZ22PAA11353
 (F82811) 3 FA28. MS/C TVT 656. CONF IG. 02VZ22PAA11353
 (F82812) 3 FA28. MS/C TVT 656. CONF IG. 02VZ22PAA11353

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1612 IN.
 BREF 2.7470 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

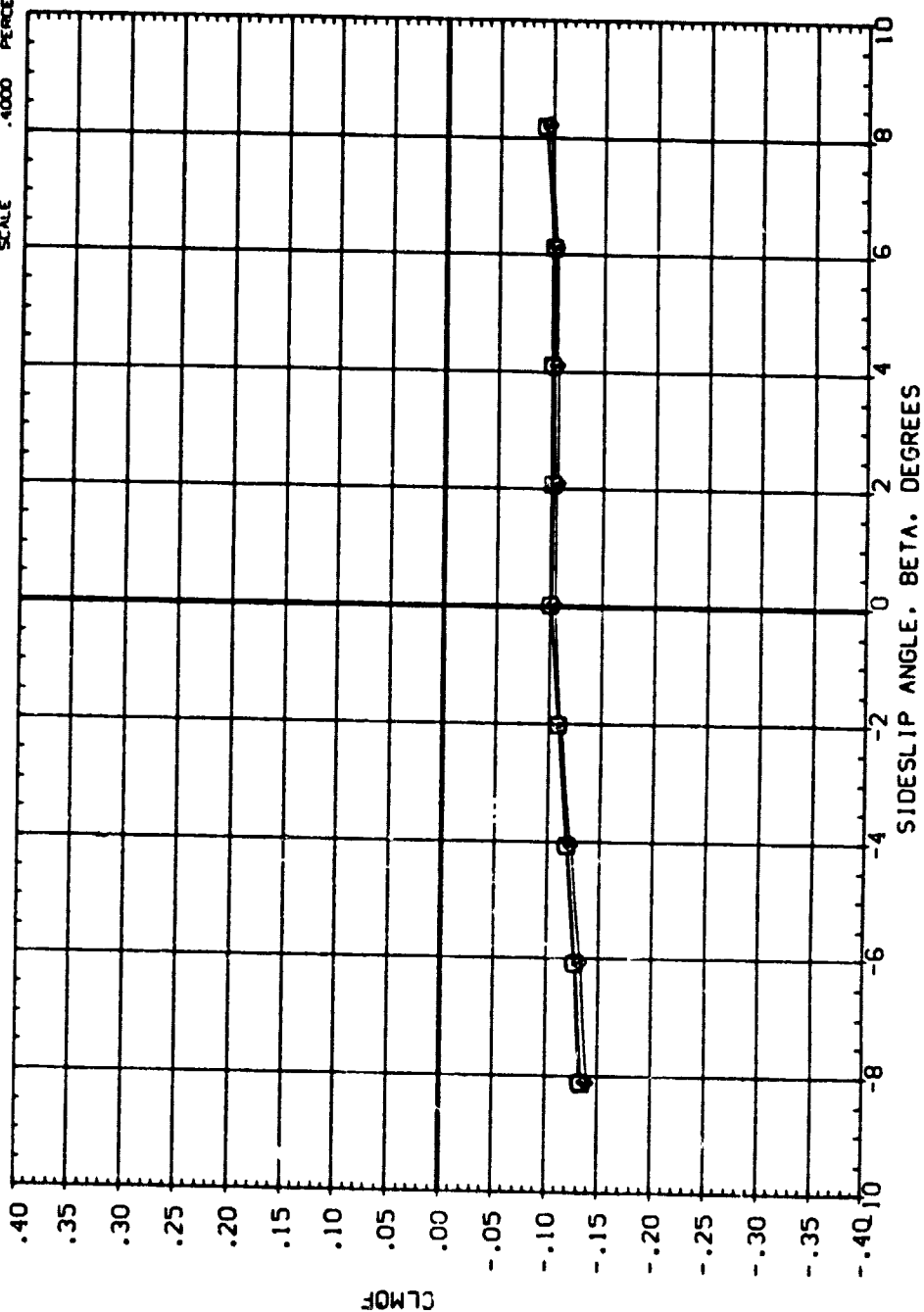


EFFECT OF BODY FLAP

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2809) FA28. HSC TWT 656. CONF IG. 02NZE ZNPAA11353
 (FB2811) FA28. HSC TWT 656. CONF IG. 02NZE ZNPAA11353
 (FB2812) FA28. HSC TWT 656. CONF IG. 02NZE ZNPAA11353

REFERENCE INFORMATION
 SREF 6.1980 SO. IN
 XREF 5.1612 IN.
 YREF 3.7470 IN.
 ZREF 2.7120 IN.
 WREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

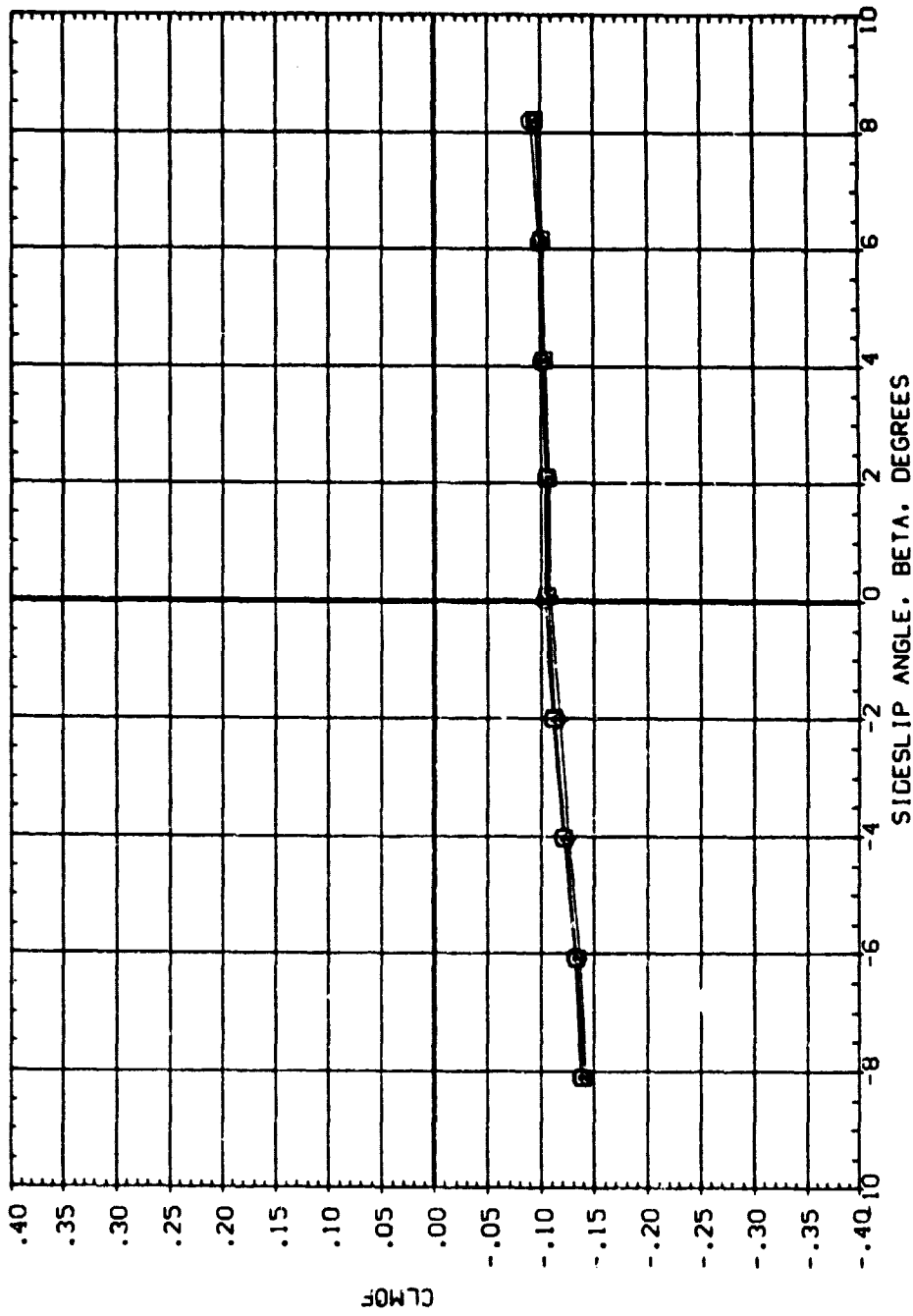


EFFECT OF BODY FLAP

(O)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION REFERENCE INFORMATION

(FB2809)	FA28. MSFC TWT 656. CONF 1G.	QZUZE ZNPAA1T353	SREF	6.1980	IN
(FB2811)	FA28. MSFC TWT 656. CONF 1G.	QZUZE ZNPAA1T353	LREF	5.1612	IN
(FB2812)	FA28. MSFC TWT 656. CONF 1G.	QZUZE ZNPAA1T353	BREF	3.7470	IN
			XPRP	2.7120	IN
			YPRP	.0000	IN
			ZPRP	.0000	IN
			SCALE	.4000	PERCENT



EFFECT OF BODY FLAP

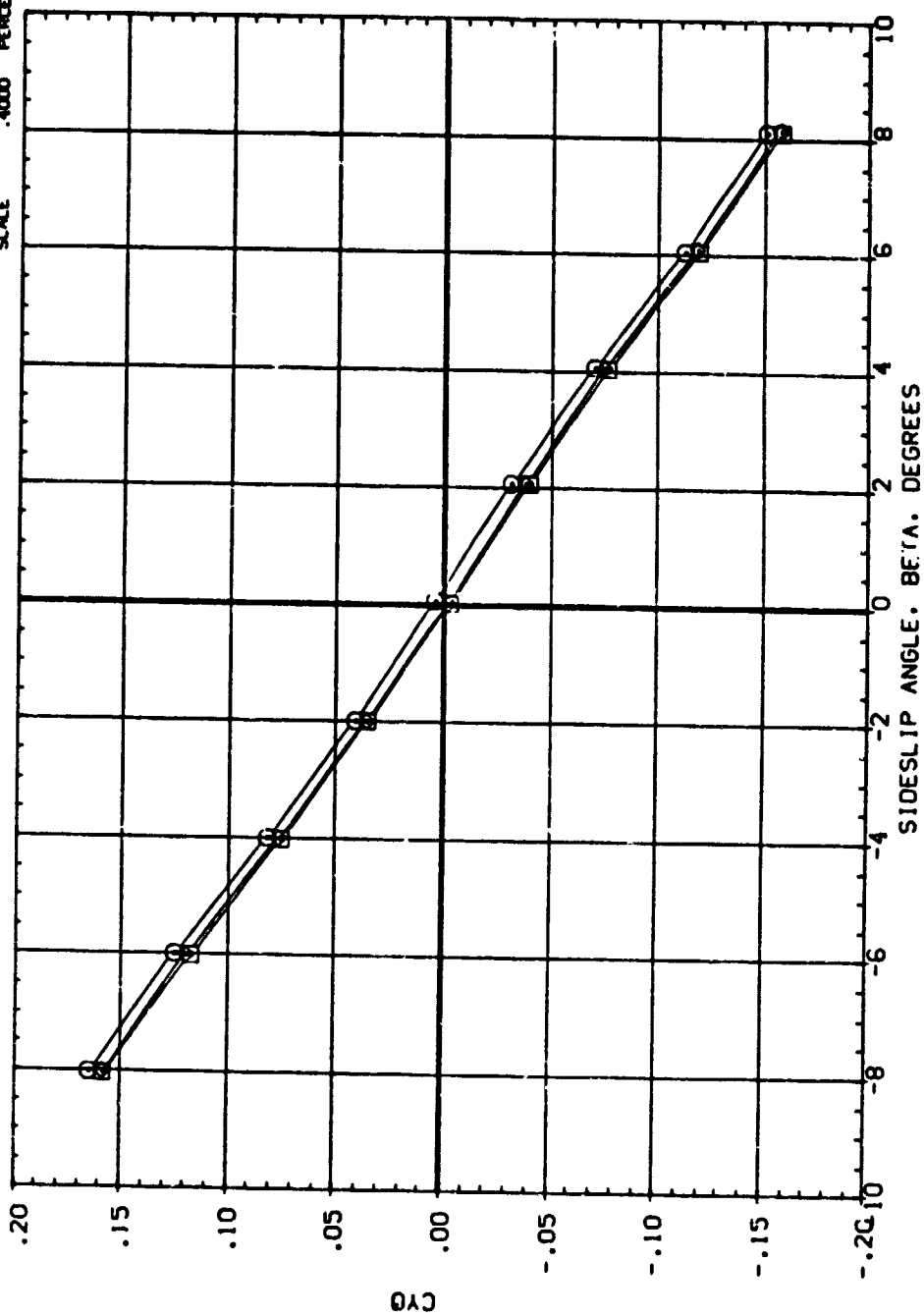
(E)MACH = 1.25

DATA SET SYMBOL: (FB2009) (FB2011) (FB2012)

CONFIGURATION DESCRIPTION: FA28. MSFC TWT 656. CONF 1G. GZVZ2PAPAT1J53
 FA28. MSFC TWT 656. CONF 1G. GZVZ2PAPAT1J53
 FA28. MSFC TWT 656. CONF 1G. GZVZ2PAPAT1J53

REFERENCE INFORMATION

REF	SO	IN
SREF	6.1590	IN
LREF	5.1612	IN
BREF	3.7470	IN
XTRP	2.7120	IN
YTRP	.0000	IN
ZTRP	.0000	IN
SCALE	.4000	PERCENT

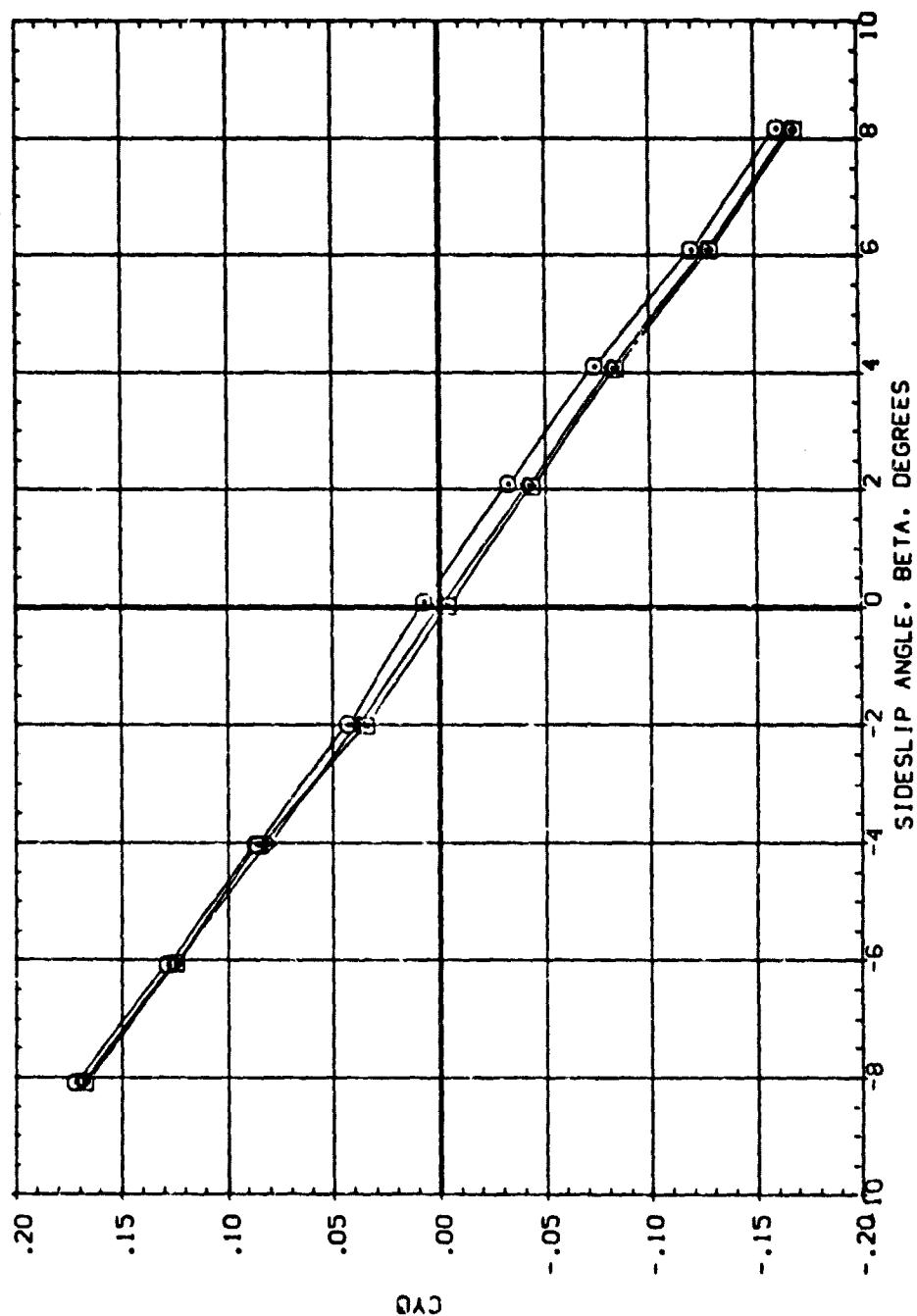


EFFECT OF BODY FLAP

(A) MACH = .60

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(FB2809)	FA28, MFC TWT 656, CONFIG.	ONZEZMPAATT353
(FB2811)	FA28, MFC TWT 656, CONFIG.	ONZEZMPAATT353
(FB2812)	FA28, MFC TWT 656, CONFIG.	ONZEZMPAATT353

REFERENCE INFORMATION	SO. IN
SREF	6.1580
LREF	5.1612
XREF	3.7470
YREF	2.7120
ZREF	.0000
SCALE	.4000
	PERCENT



EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FB2809) FA28. MSC TVT 656. CONF IG. 02VZ2PMPAT1153

(FB2811) FA28. MSC TVT 656. CONF IG. 02VZ2PMPAT1153

(FB2812) FA28. MSC TVT 656. CONF IG. 02VZ2PMPAT1153

REFERENCE INFORMATION

SREF 6.1580 50. IN

LREF 5.1612 IN.

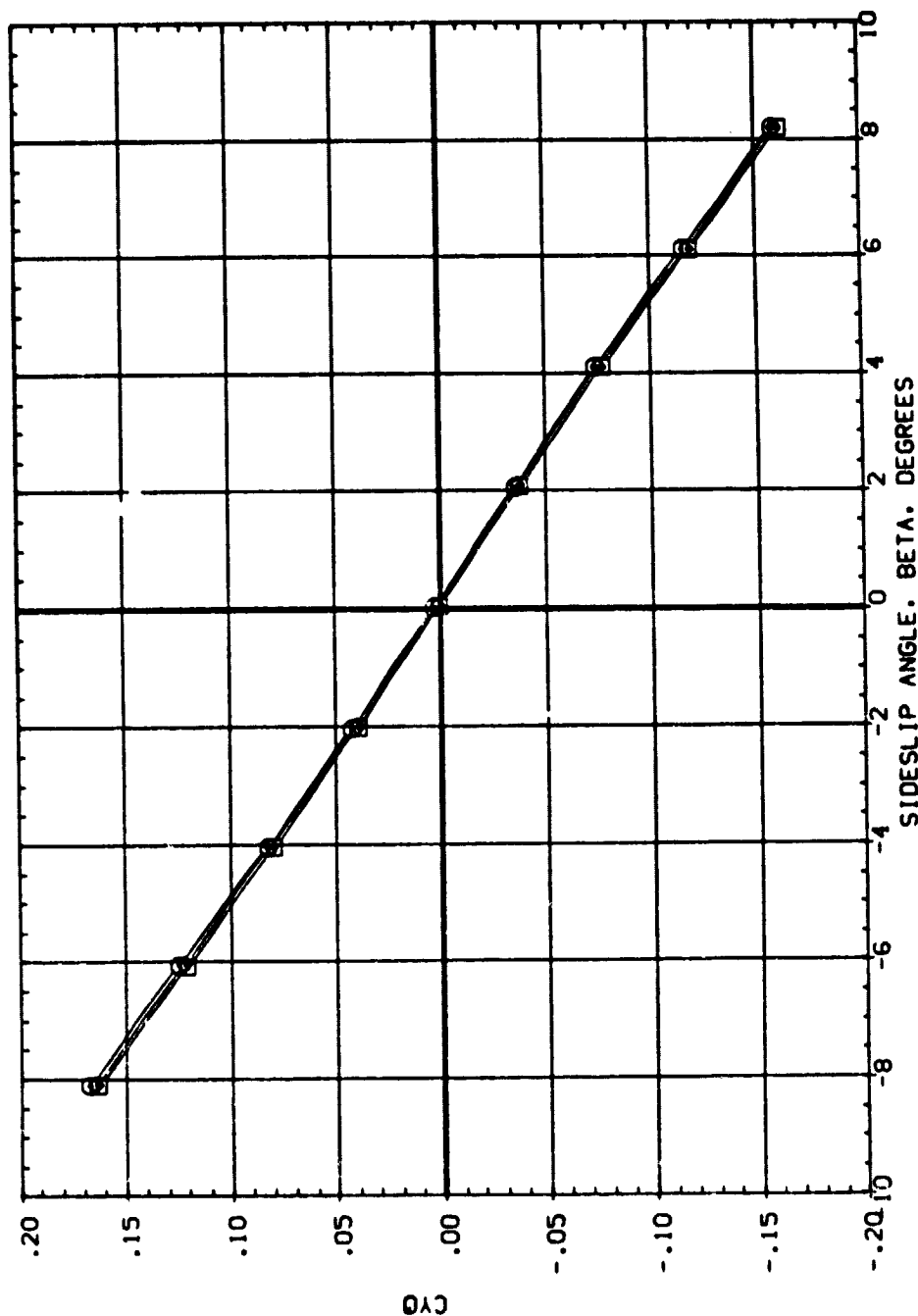
BREF 3.7470 IN.

XREF 2.7120 IN.

YREF .0000 IN.

ZREF .0000 IN.

SCALE .4000 PERCENT

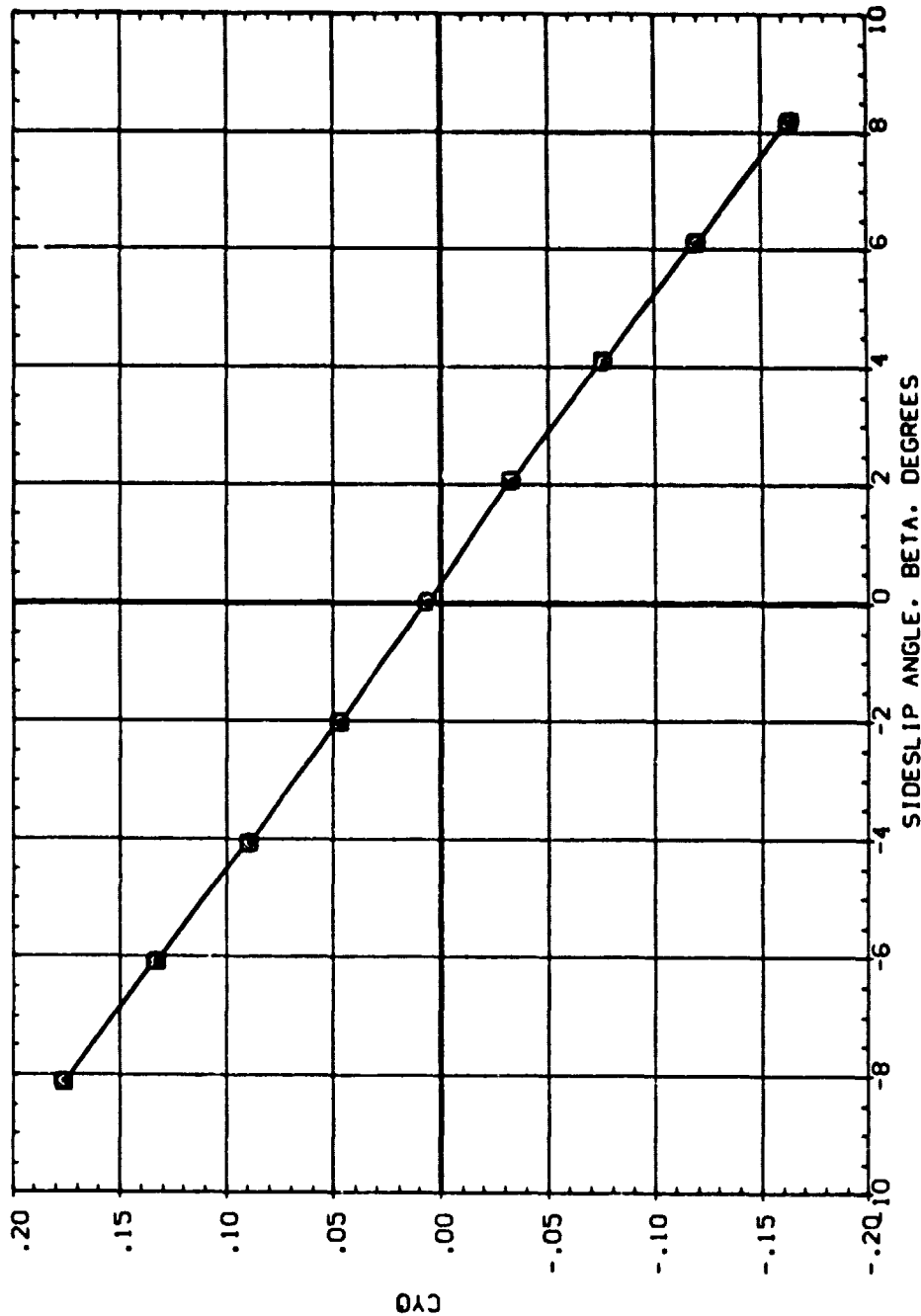


EFFECT OF BODY FLAP

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2809) FA28. MSFC TVT 656. CONF 1G. Q2NZE2PAPAATT353
 (FB2811) FA28. MSFC TVT 656. CONF 1G. Q2NZE2PAPAATT353
 (FB2812) FA28. MSFC TVT 656. CONF 1G. Q2NZE2PAPAATT353

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

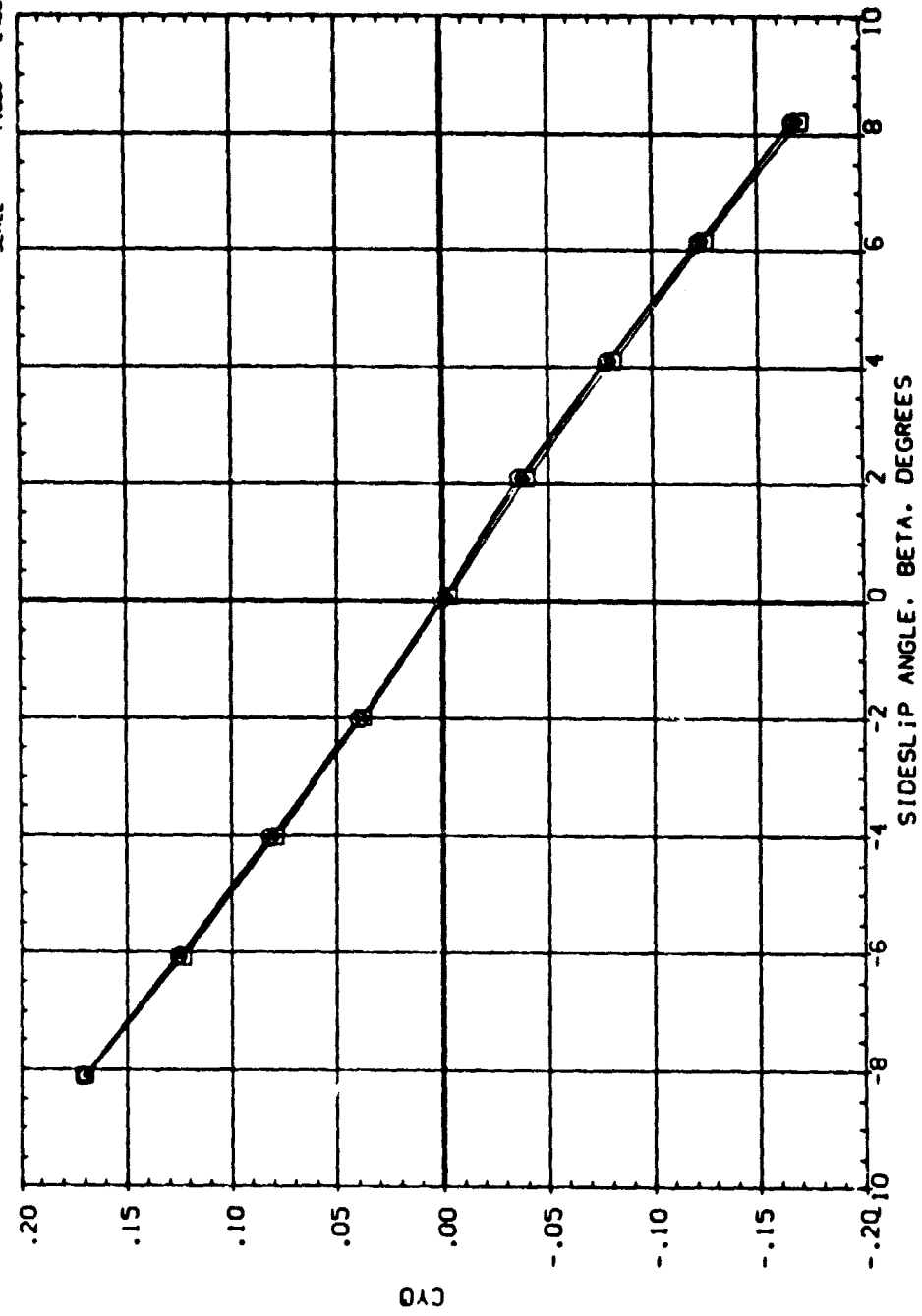


EFFECT OF BODY FLAP

(O)MACH = 1.10

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FB2809) FA28. MSC TWT 556. CONF 10. Q2NZE 20MPAA11353
 (FB2811) FA28. MSC TWT 556. CONF 10. Q2NZE 20MPAA11353
 (FB2812) FA28. MSC TWT 556. CONF 10. Q2NZE 20MPAA11353

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

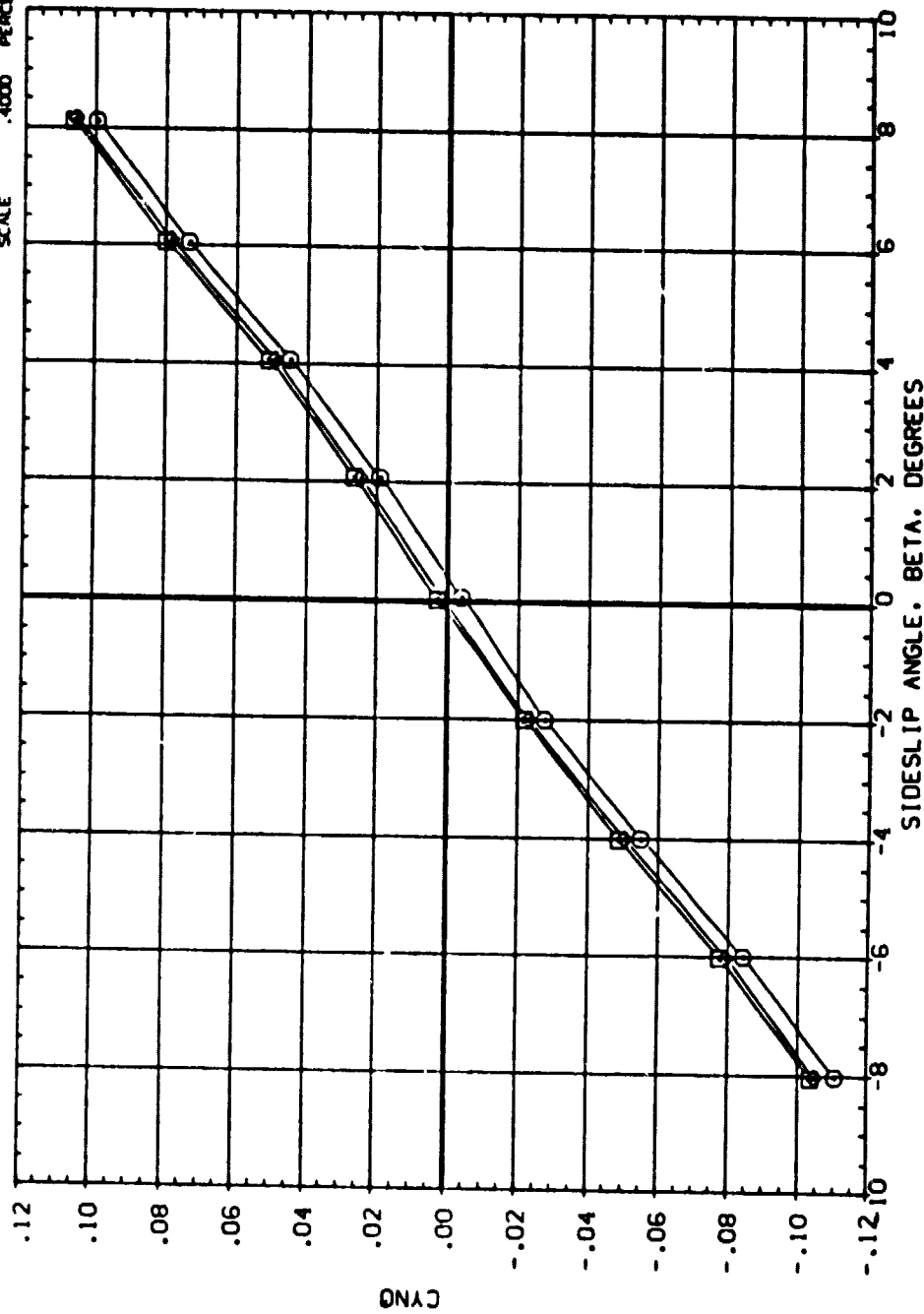


EFFECT OF BODY FLAP

(E)MACH = 1.25

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (FB2809) FA28. MSC 14T 656. CONF 1G. QNZE2PAPAT1353
 (FB2811) FA28. MSC 14T 656. CONF 1G. QNZE2PAPAT1353
 (FB2812) FA28. MSC 14T 656. CONF 1G. QNZE2PAPAT1353

REFERENCE INFORMATION
 SREF 6.1380 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 YREF 2.7120 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

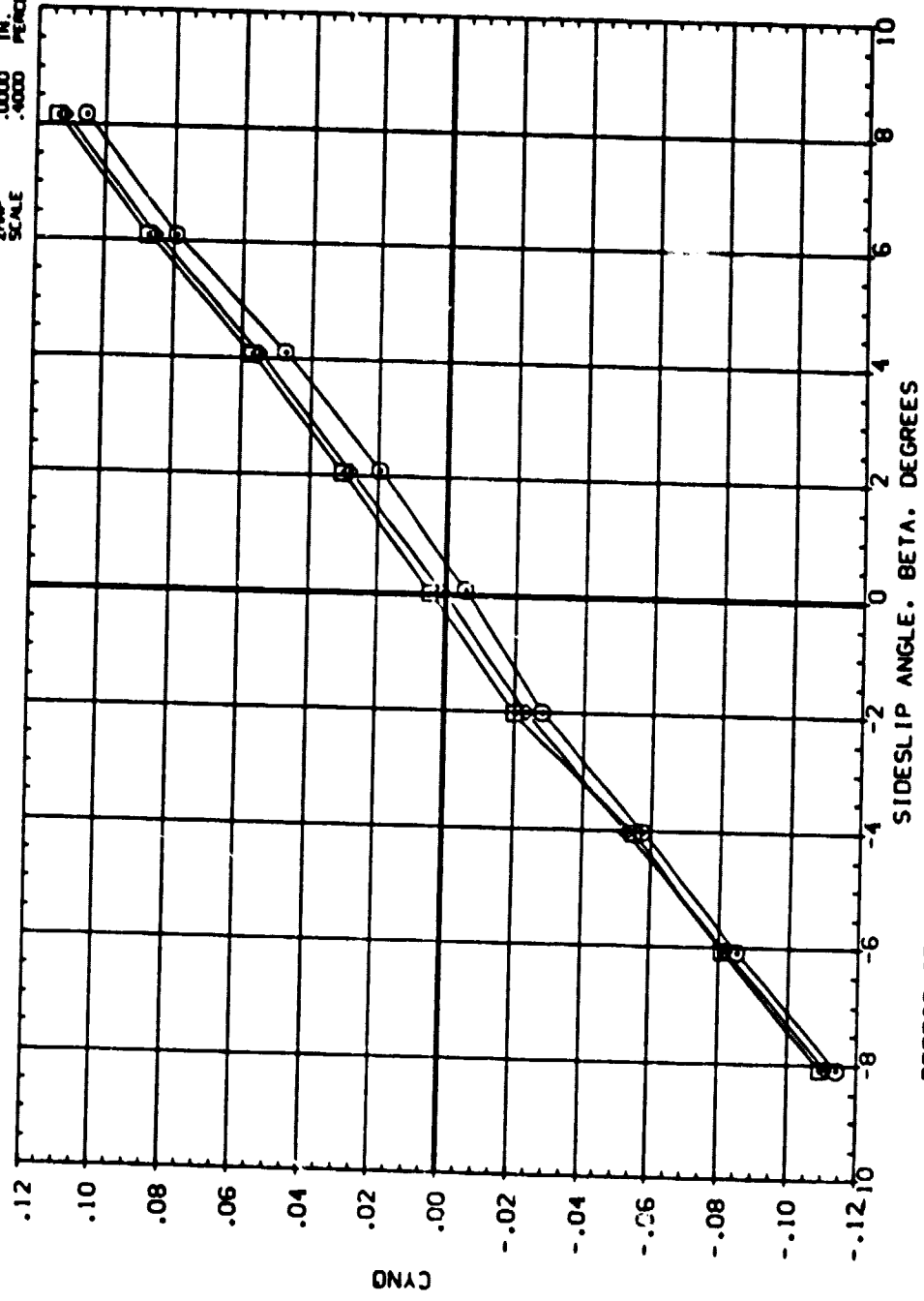


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2809) FA28. MSFC TWT 656. CONF 10. GZVEZMPAA11353
 (FB2811) FA28. MSFC TWT 656. CONF 10. GZVEZMPAA11353
 (FB2812) FA28. MSFC TWT 656. CONF 10. GZVEZMPAA11353

REFERENCE INFORMATION
 SBT 6.1580 IN.
 LWT 3.1612 IN.
 WWT 2.7470 IN.
 WWP 2.7120 IN.
 ZWP .0000 IN.
 SCALE .0000 PERCENT

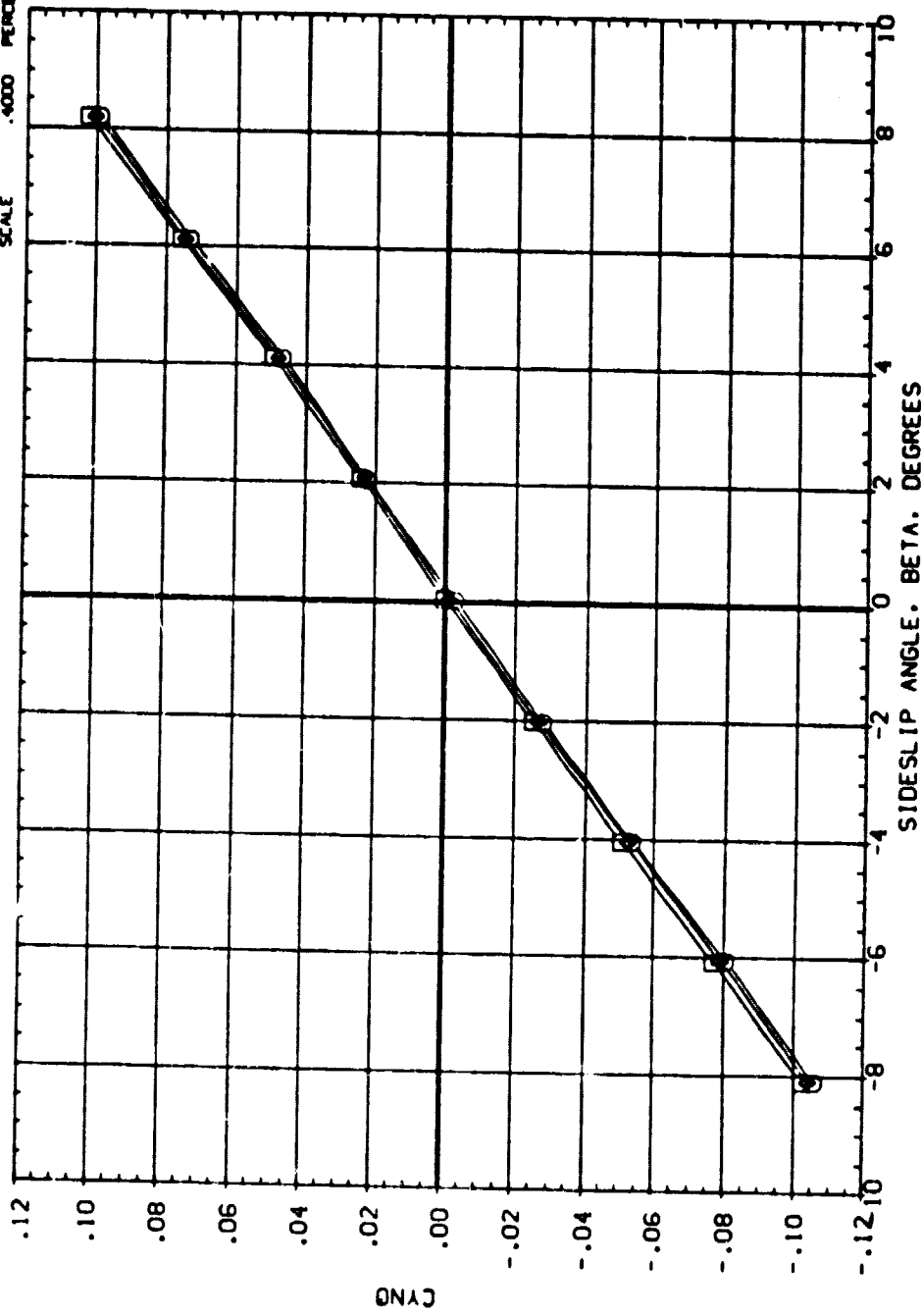


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2809) 0 FA28. MSFC INT 656. CONF IG. 02VZ28PAA1733
 (FB2811) 0 FA28. MSFC INT 656. CONF IG. 02VZ28PAA1733
 (FB2812) 0 FA28. MSFC INT 656. CONF IG. 02VZ28PAA1733

REFERENCE INFORMATION
 SREF 6.1560 SQ. IN.
 LREF 5.1512 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

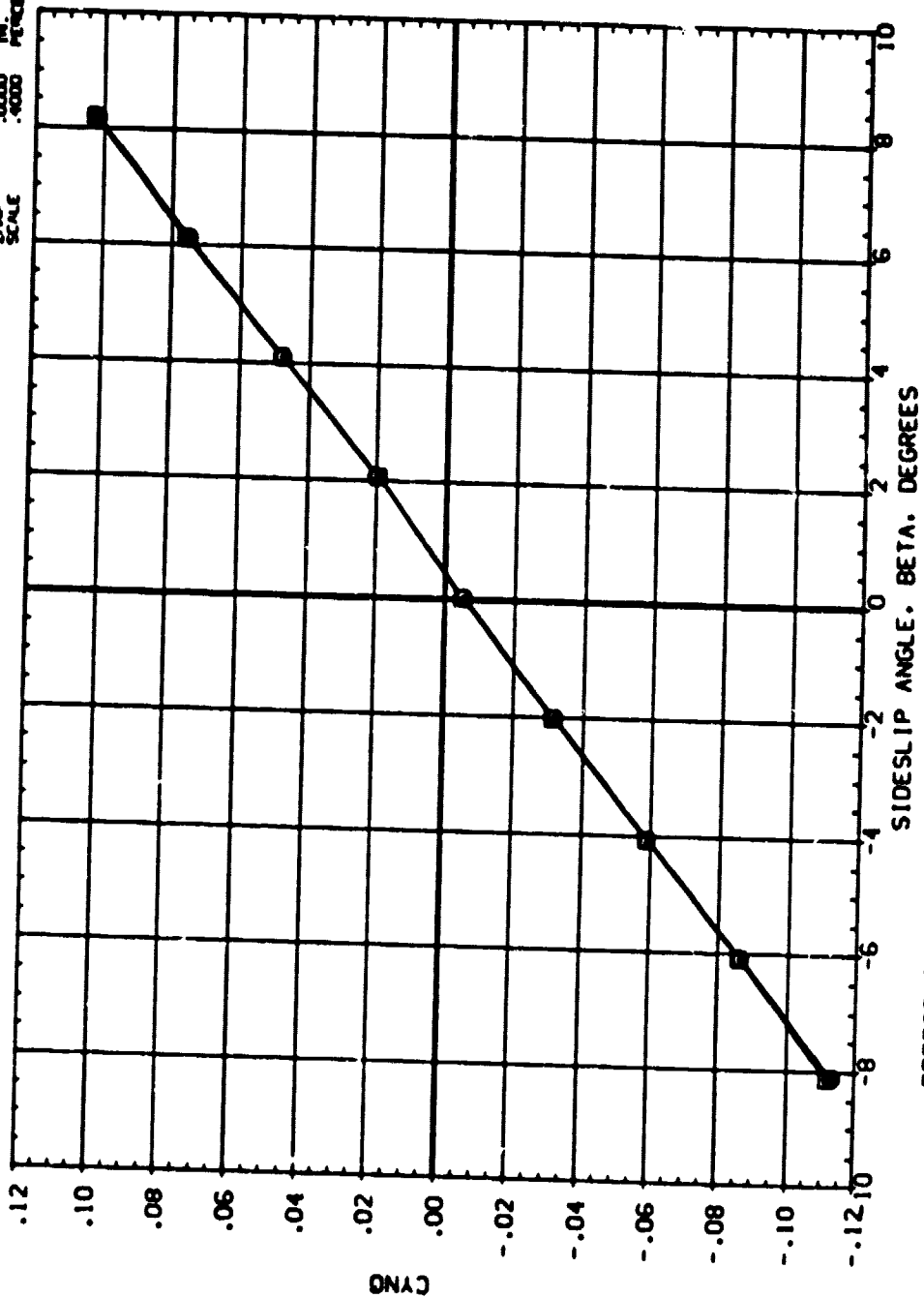


EFFECT OF BODY FLAP

(C)MACH = 1.05

DATA SET SYMBOL: 8
 (FEB209) FA2B: HPFC 141 63E. CONF 1G. ORVZ:PMMA1753
 (FEB2011) FA2B: HPFC 141 63E. CONF 1G. ORVZ:PMMA1753
 (FEB2012) FA2B: HPFC 141 63E. CONF 1G. ORVZ:PMMA1753

REFERENCE INFORMATION
 SET: 6.1980 50. IN.
 LIFT: 3.1612 IN.
 DRAG: 2.7470 IN.
 YAW: 2.7120 IN.
 ROLL: .0000 IN.
 SCALE: .0000 PERCENT



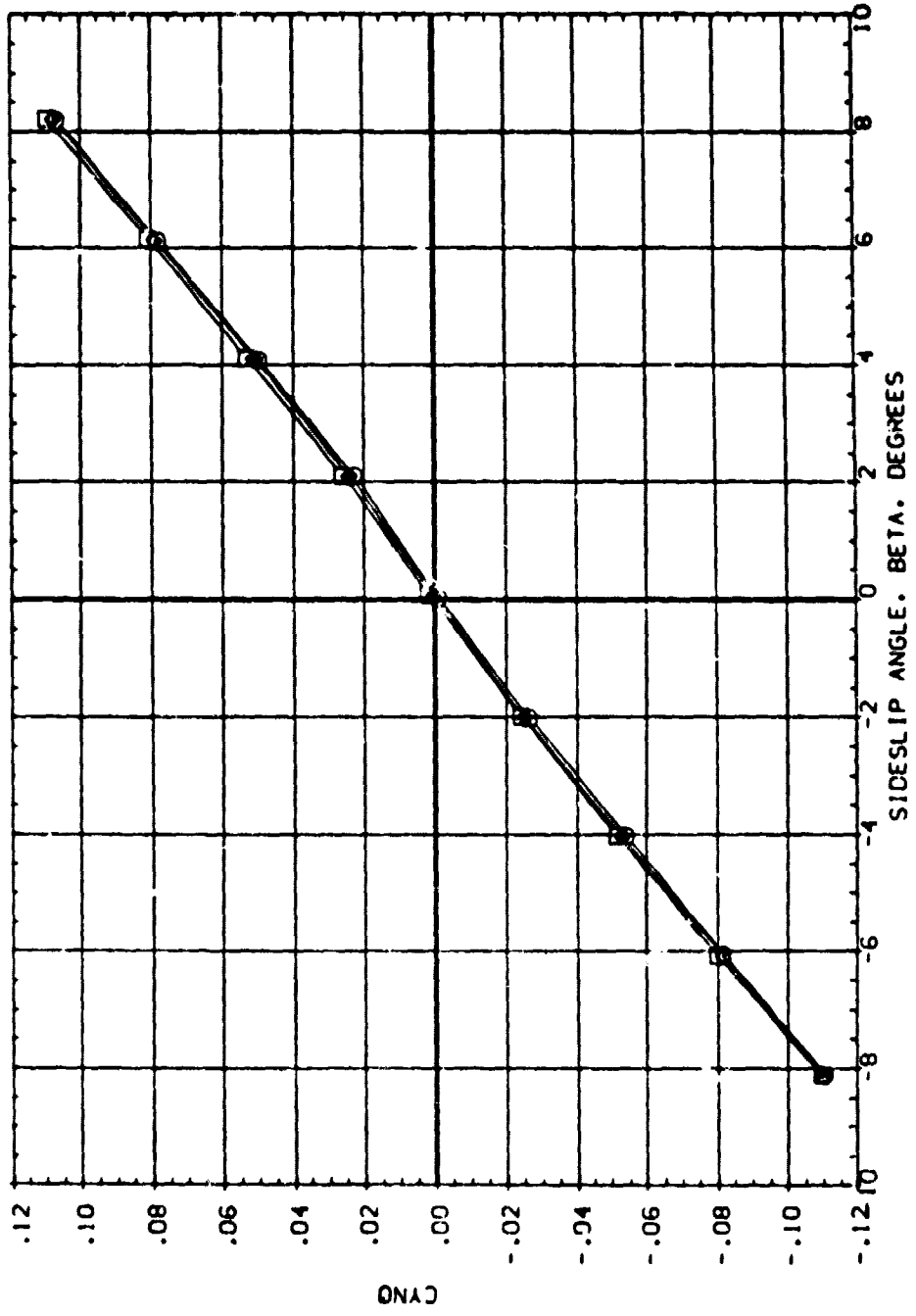
EFFECT OF BODY FLAP

(0)MACH = 1.10

DATA SET SYMBOL: 08

CONFIGURATION DESCRIPTION:
 FB20: MFC TWT 655; COF IG: 02N2E20PAA1T353
 FB20: MFC TWT 656; COF IG: 02N2E20PAA1T353
 FB20: MFC TWT 656; COF IG: 02N2E20PAA1T353

REFERENCE INFORMATION:
 SREF: 6.1580 IN.
 LREF: 5.1612 IN.
 BREF: 3.7470 IN.
 YREF: 2.7120 IN.
 ZREF: .0000 IN.
 SCALE: .0000 PERCENT



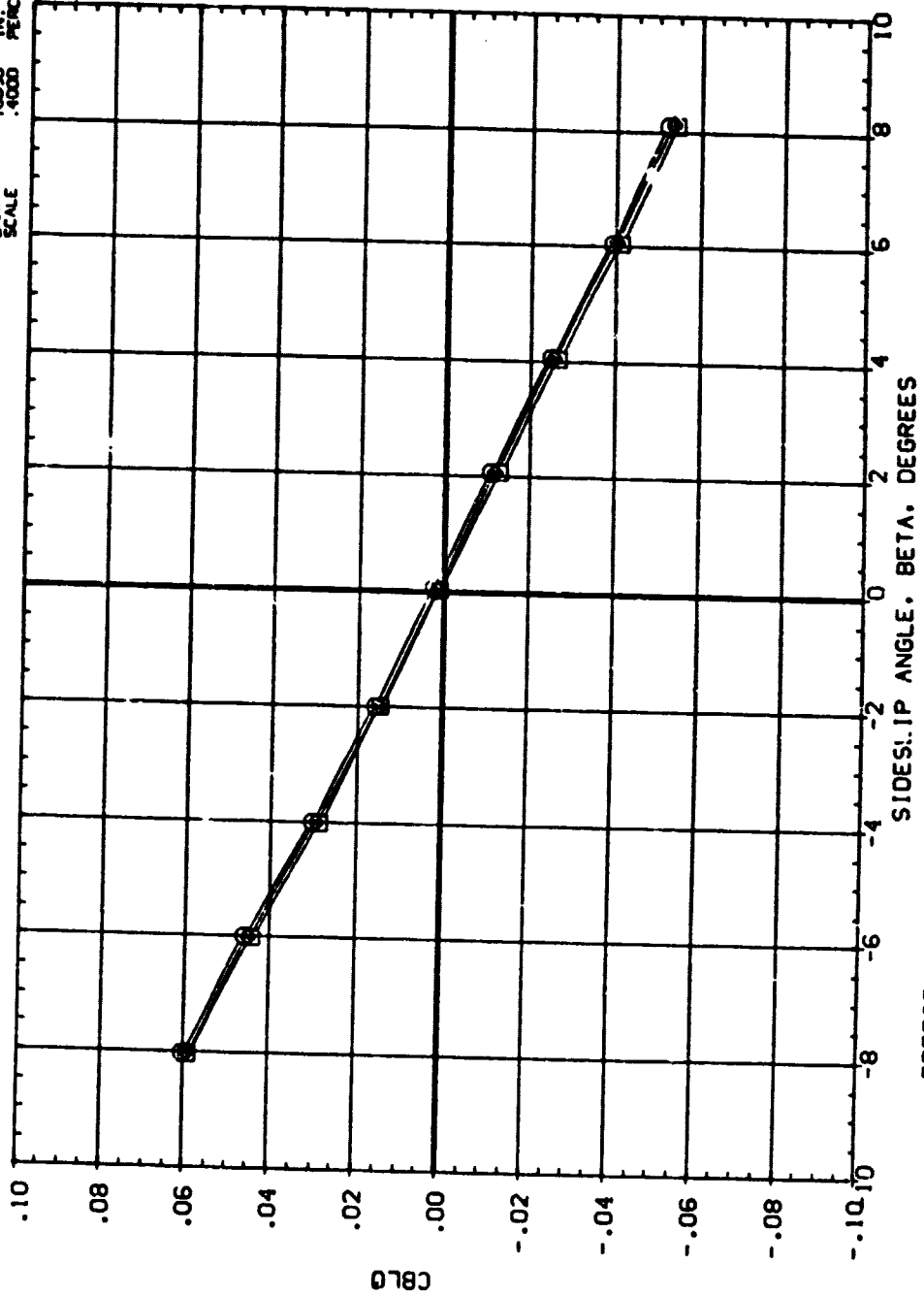
EFFECT OF BODY FLAP

(E)MACH = 1.25

DATA SET SYMBOL: (FB2809) (FB2811) (FB2812)

CONFIGURATION DESCRIPTION: FA28. MSFC TWT 655. CONF 10. GUNZE 2MPAAIT753
 FA28. MSFC TWT 655. CONF 10. GUNZE 2MPAAIT753
 FA28. MSFC TWT 655. CONF 10. GUNZE 2MPAAIT753

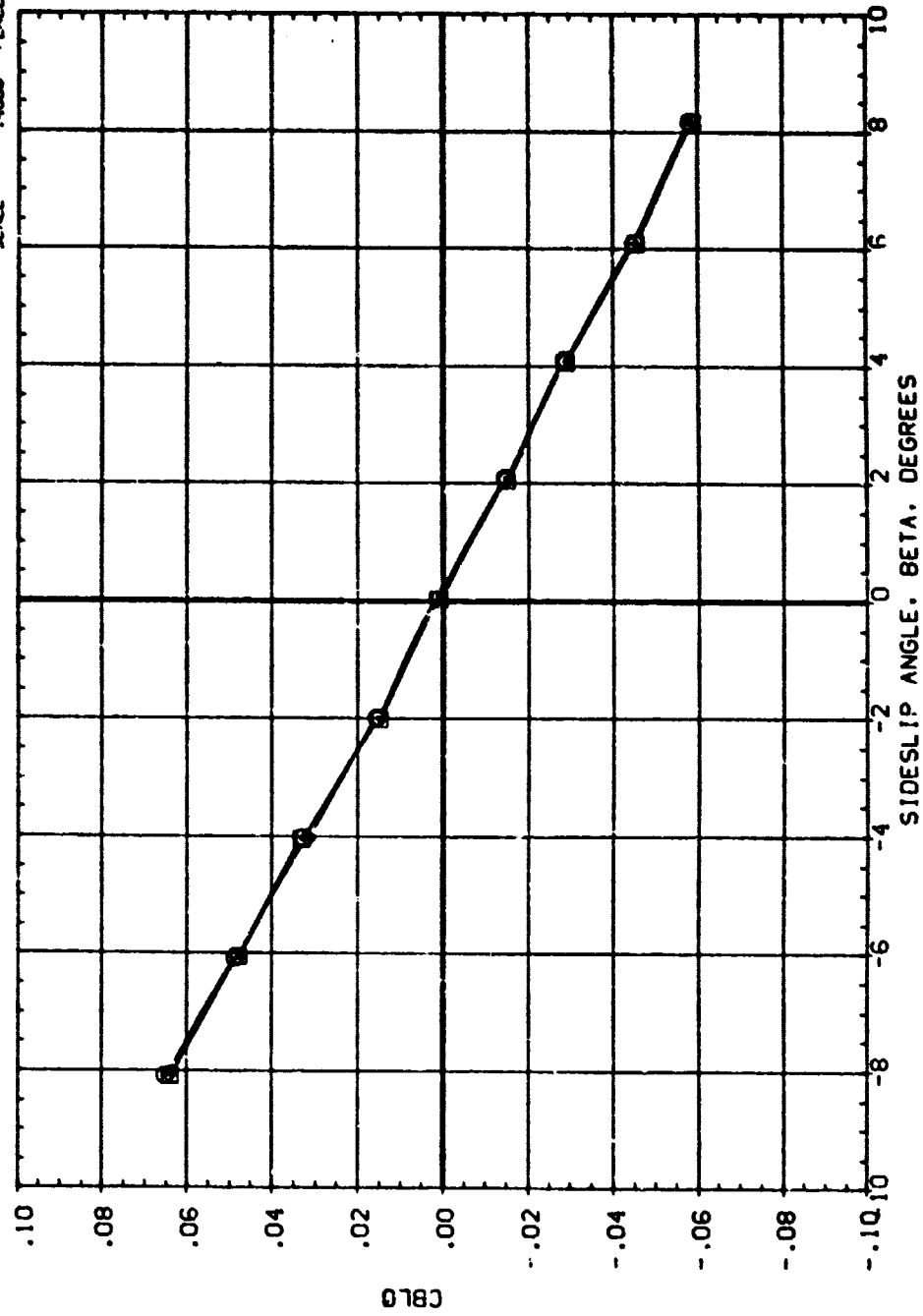
REFERENCE INFORMATION: SREF 6.1800 50. IN. LREF 5.1612 10. IN. BREF 3.7170 10. IN. YREF 2.7120 10. IN. ZREF .0000 10. IN. SCALE .4000 PERCENT



EFFECT OF BODY FLAP
 (A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2809) FA28. MSFC TWT 656. COF IG. CNYE ZMPAAT1253
 (FB2811) FA28. MSFC TWT 656. COF IG. CNYE ZMPAAT1253
 (FB2812) FA28. MSFC TWT 656. COF IG. CNYE ZMPAAT1253

REFERENCE INFORMATION
 SHEET 6.1880 90. IN
 LIFT 3.1612 IN.
 DRAG 2.7470 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .4000 PERCENT



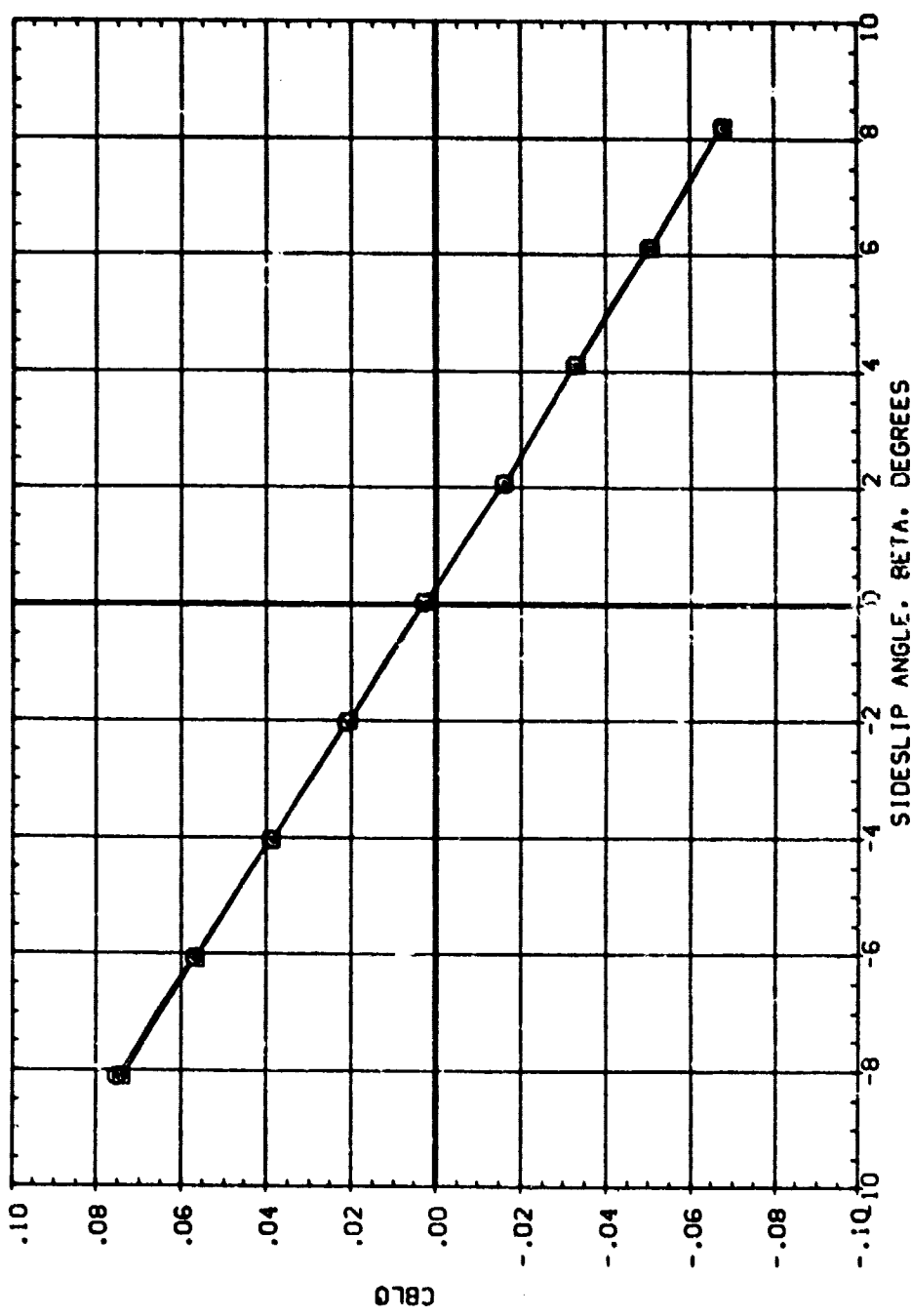
EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL: (FB2809) (FB2811) (FB2812)

CONFIGURATION DESCRIPTION: FA28. MSFC TWT 556. CONF 16. G2NZE 2000AATT353
 FA28. MSFC TWT 556. CONF 16. G2NZE 2000AATT353
 FA28. MSFC TWT 556. CONF 16. G2NZE 2000AATT353

REFERENCE INFORMATION:
 SREF 5.1580 IN.
 LREF 5.1812 IN.
 BREF 3.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .4000 PERCENT

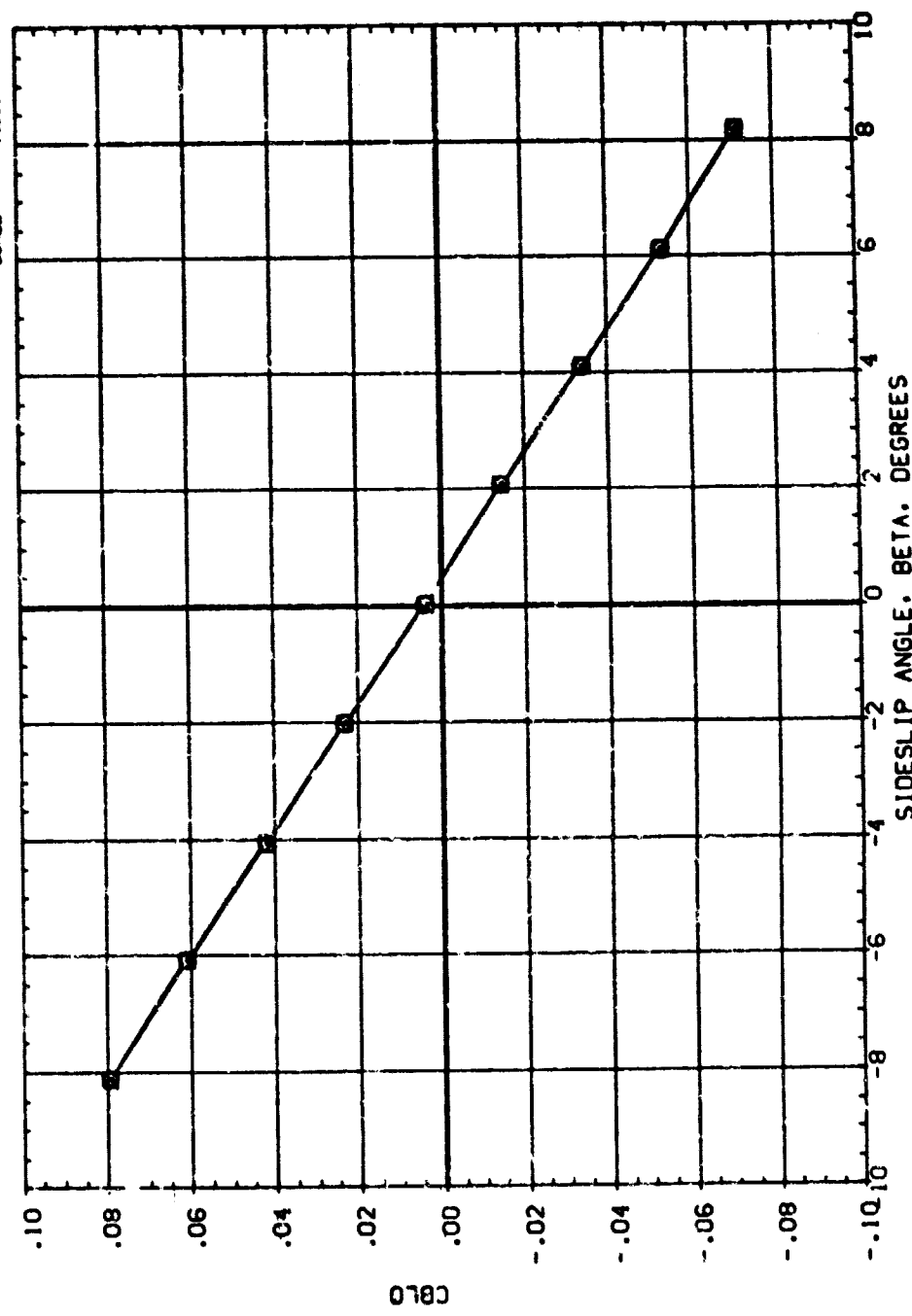


EFFECT OF BODY FLAP

(C)MACH = 1.05

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2609) 8 FA28. MSFC 101 656. CONF 16. Q2VZAPPAAT123
 (FB2611) 8 FA28. MSFC 101 656. CONF 16. Q2VZAPPAAT133
 (FB2612) 8 FA28. MSFC 101 656. CONF 16. Q2VZAPPAAT153

REFERENCE INFORMATION
 REF 6.1580 IN.
 LREF 5.1812 IN.
 REF 3.7470 IN.
 YREF 2.7120 IN.
 YREF 0.0000 IN.
 ZREF 0.0000 IN.
 SCALE .4000 PERCENT

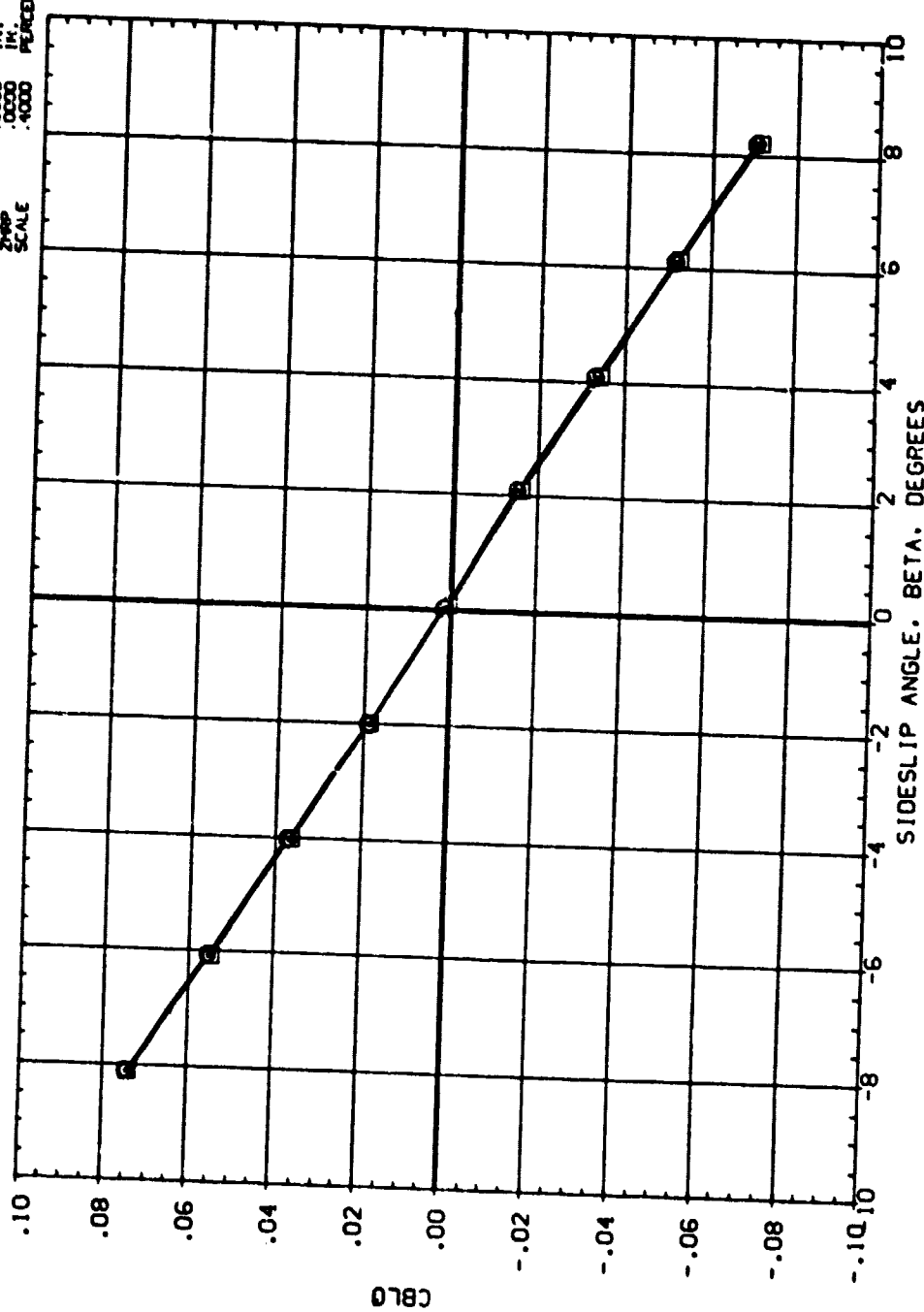


EFFECT OF BODY FLAP

(D)MACH = 1.10

DATA SET SYMBOL: 0
 (FB2809) FA28. MSFC TVT 656. CONF IG. 02N2E2M0PA1T753
 (FB2811) FA28. MSFC TVT 656. CONF IG. 02N2E2M0PA1T753
 (FB2812) FA28. MSFC TVT 656. CONF IG. 02N2E2M0PA1T753

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1612 IN.
 BREF 2.7470 IN.
 XREF 2.7120 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0000 PERCENT

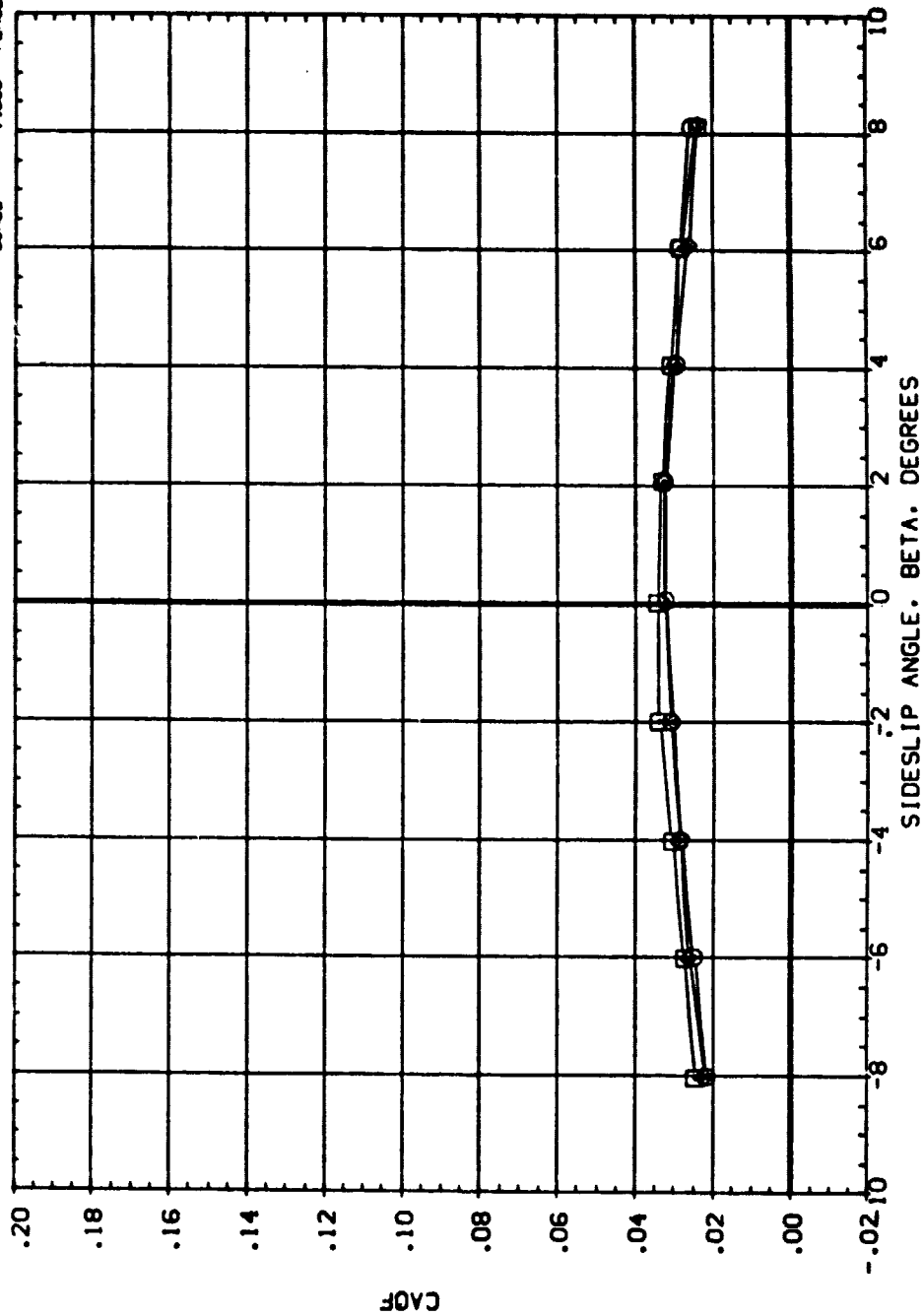


EFFECT OF BODY FLAP

(E)MACH = 1.25

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (FB2809) FA28. MSFC TWT 555. CONF 10. ONVZE ZPAPATT353
 (FB2811) FA28. MSFC TWT 556. CONF 10. OLVZE ZPAPATT353
 (FB2812) FA28. MSFC TWT 556. CONF 10. ONVZE ZPAPATT353

REFERENCE INFORMATION:
 SREF 6.1980 IN
 LREF 5.1612 IN
 BREF 3.7470 IN
 YHPP 2.7120 IN
 ZHPP .0000 IN
 SCALE .4000 PERCENT

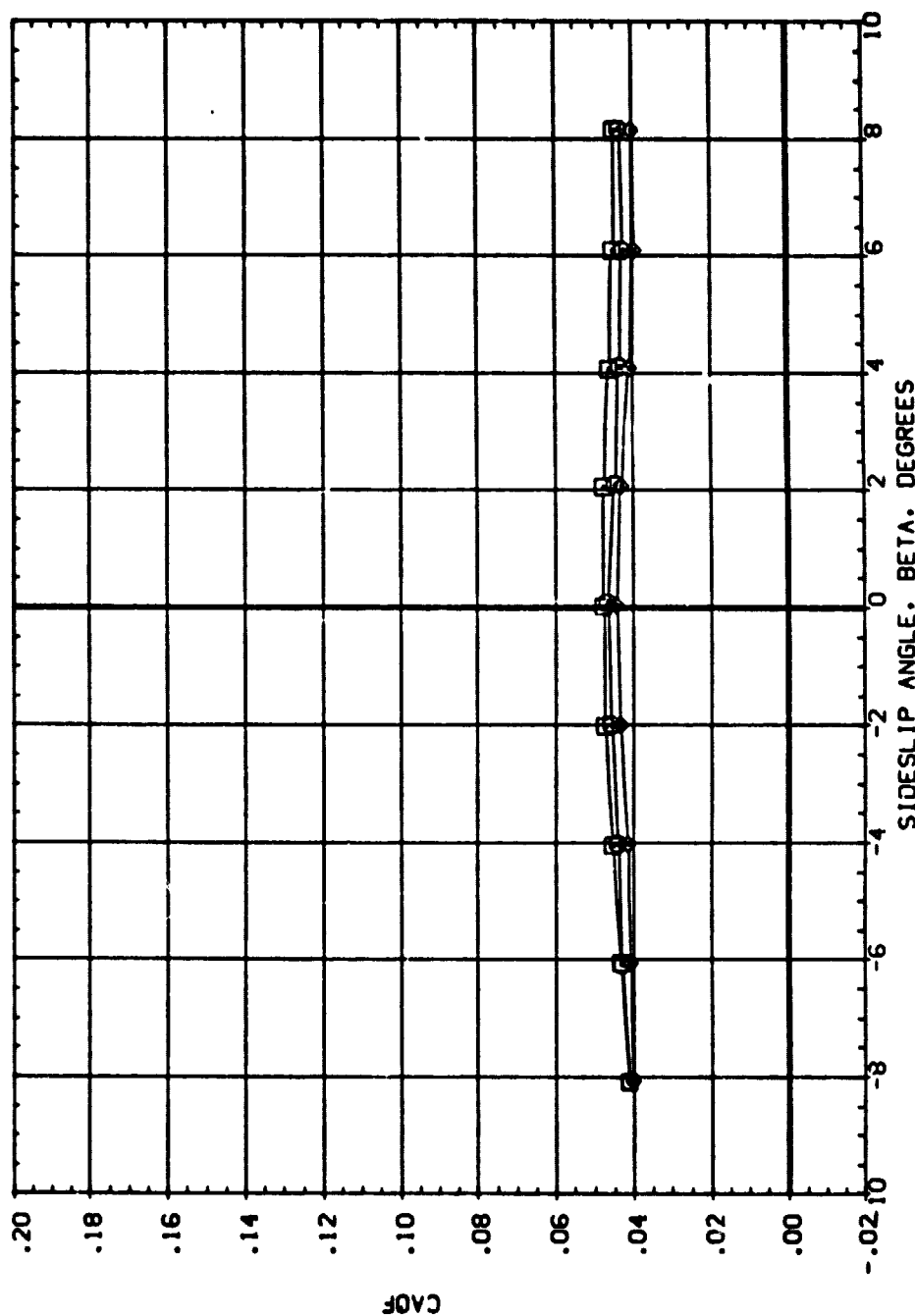


EFFECT OF BODY FLAP

(A)MACH = .60

DATA SET SYMBOL: 8
 CONFIGURATION DESCRIPTION: 8
 FA28: MSFC INT 656: COV16: 0242Z09PAA11:53
 FA28: MSFC INT 656: COV16: 0242Z09PAA11:53
 FA28: MSFC INT 656: COV16: 0242Z09PAA11:53

REFERENCE INFORMATION
 SITE: 6.1880 IN
 LRF: 3.1812 IN
 REF: 3.7470 IN
 VREF: 2.7120 IN
 VREF: .0000 IN
 ZREF: .0000 IN
 SCALE: .4000 PERCENT

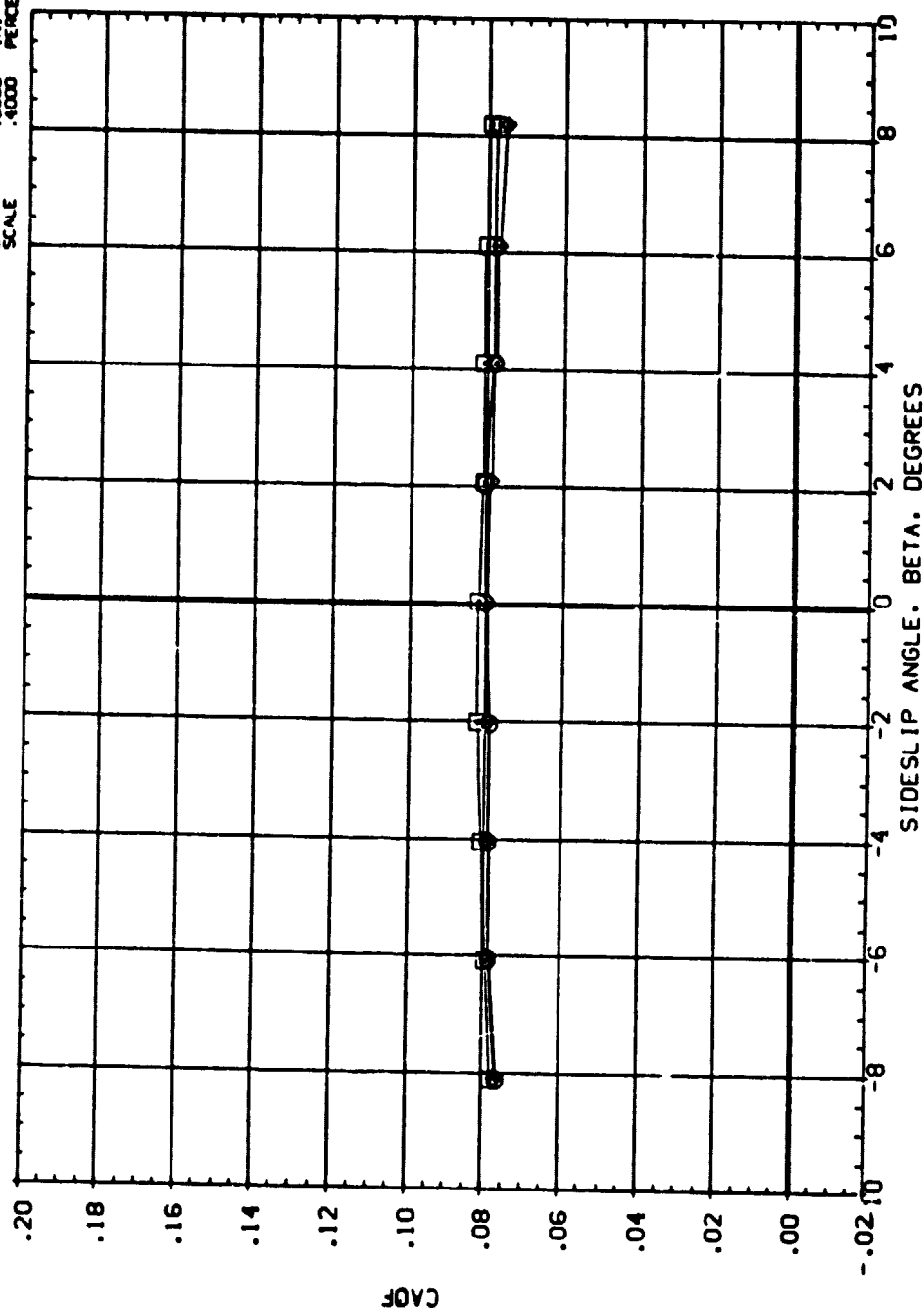


EFFECT OF BODY FLAP

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (FB2009) FA28. MSFC TVT 656. CONF IG. QZVZ2PAPAA11353
 (FB2011) FA28. MSFC TVT 656. CONF IG. QZVZ2PAPAA11353
 (FB2012) FA28. MSFC TVT 656. CONF IG. QZVZ2PAPAA11353

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1612 IN.
 BREF 3.7470 IN.
 XMRP 2.7120 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .4000 PERCENT

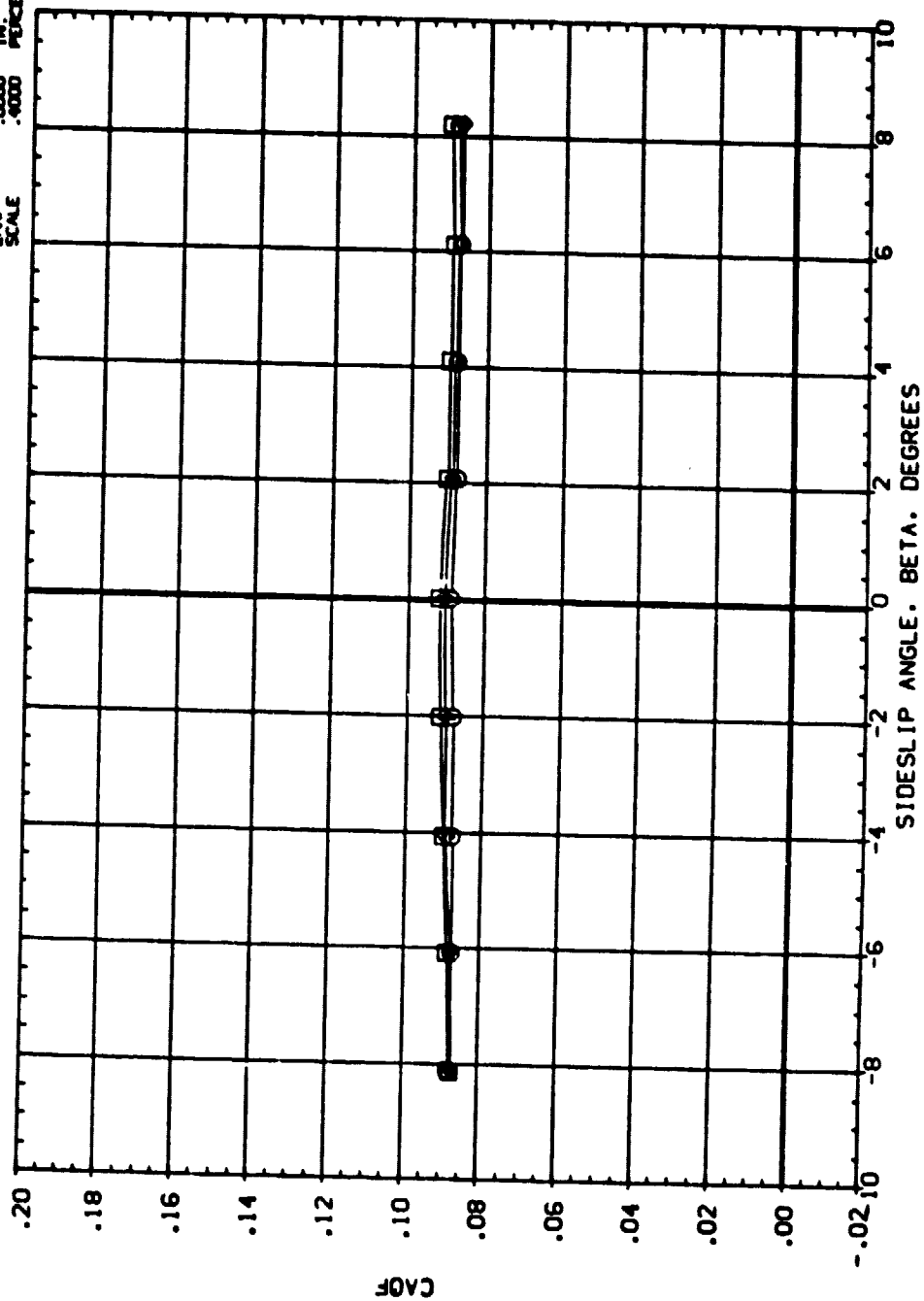


EFFECT OF BODY FLAP

(C)MACH = 1.05

FAZB.	MSFC	TWT	656.	CONF 16.	02V2E2PMPAATT353
FAZB.	MSFC	TWT	656.	CONF 16.	02V2E2PMPAATT353
FAZB.	MSFC	TWT	656.	CONF 16.	02V2E2PMPAATT353

REF	6.1980	90.	IN.
LINE	5.1612	IN.	
REF	3.7470	IN.	
REF	2.7120	IN.	
REF	.0000	IN.	
REF	.0000	IN.	
SCALE	.0000	PERCENT	



EFFECT OF BODY FLAP
(O)MACH = 1.10

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FB2809) 8 FA28. MSFC TVT 656. CONF IG. 02VZ2PMPAATT353

(FB2811) 8 FA28. MSFC TVT 656. CONF IG. 02VZ2PMPAATT353

(FB2812) 8 FA28. MSFC TVT 656. CONF IG. 02VZ2PMPAATT353

REFERENCE INFORMATION

SHEET 6.1580 50. IN

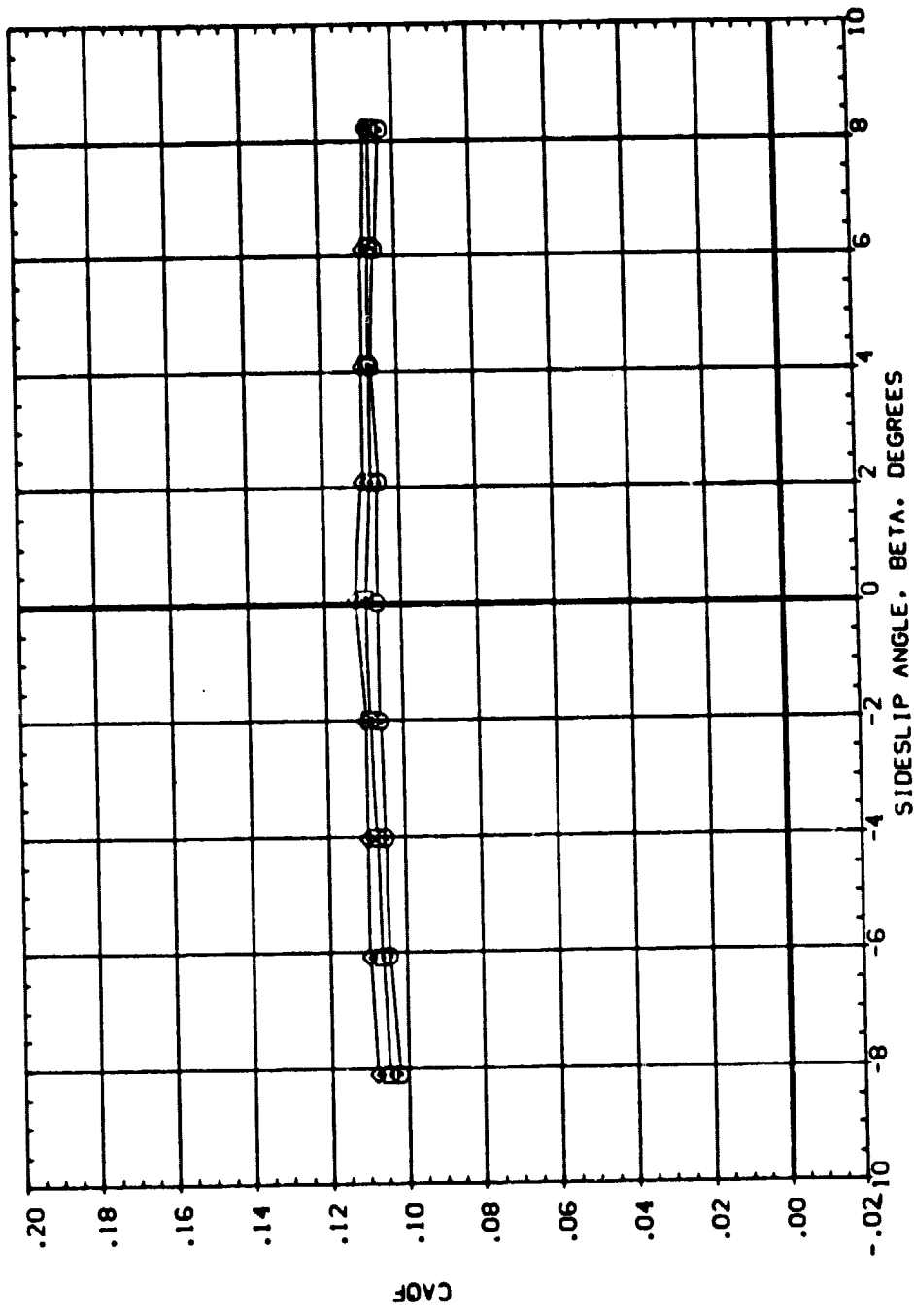
LINE 5.1612 IN.

REF 3.7470 IN.

YREF 2.7120 IN.

ZREF .0000 IN.

SCALE .4000 PERCENT



EFFECT OF BODY FLAP

(E)MACH = 1.25